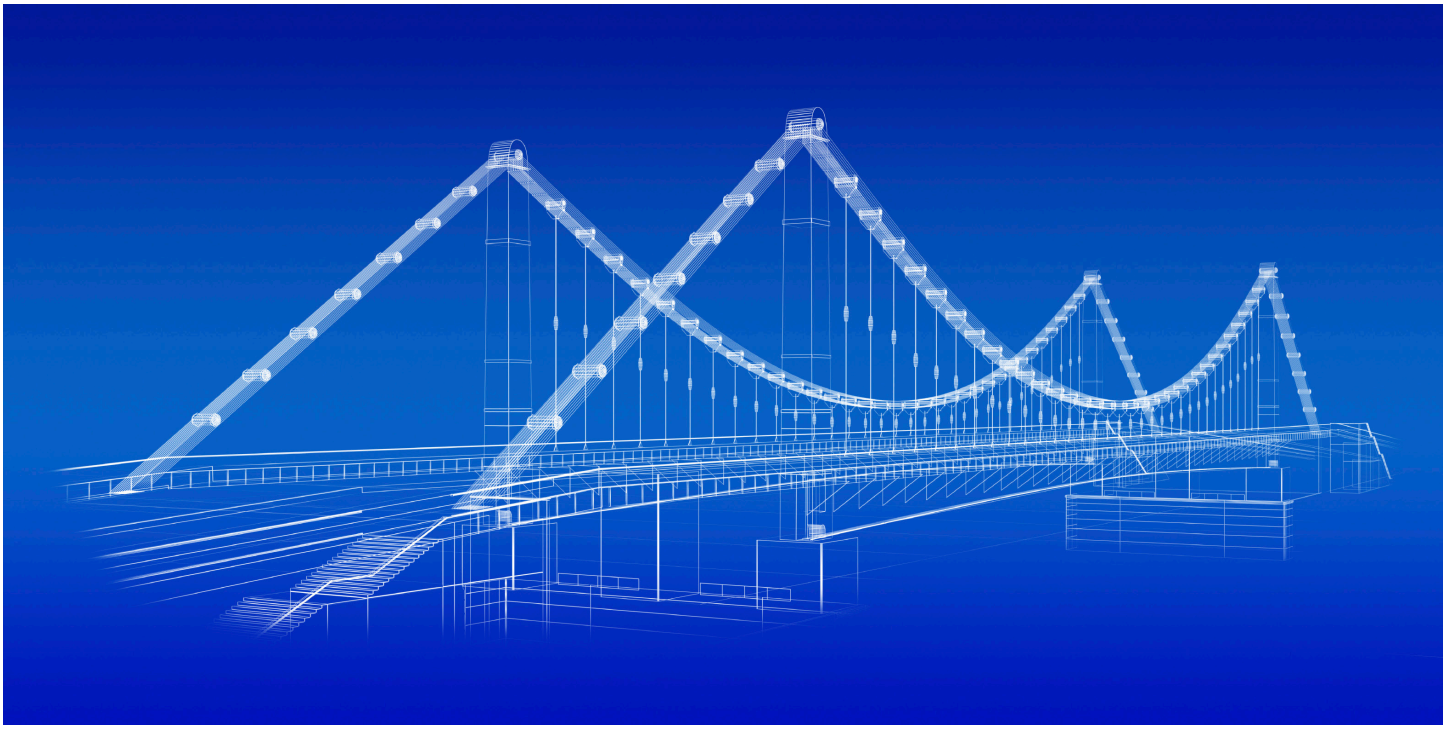
Building Bridges for Student Success

A Sourcebook for Colleges and Universities



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at The University of Oklahoma

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Part 5: Supporting Student Retention and Graduation through Faculty Engagement

The Role of Faculty

Faculty Conversations

Preface and Acknowledgments

Within the current and ever-changing landscape of external accountability in higher education, student success is a dominant theme in discussions of educational quality and effectiveness. Student retention and graduation rates remain the key metrics of accountability even though the discussion increasingly focuses on the need to frame success in the context of institutional mission and students' backgrounds and intent. As scholarship on student success and institutional practices matures, the focus is shifting from simple calculations of retention and graduation rates to detailed analyses of the effectiveness of a wide spectrum of institutional efforts and the experiences of a diverse array of students. It is increasingly recognized that student success also involves consideration of access, affordability, attainment, and sustained achievement across a broad base of learning experiences. If our institutions are to achieve high levels of student success, it is essential that we maintain the broadest view of how they should define student success, with data, information, and knowledge freely flowing between related offices within and among our institutions.

The chapters in the *Sourcebook* address a simple question: How do we enhance student success? This question, however, contains several inherent sub-questions that are extremely challenging to answer:

1. What is student success?
2. How do we know that what we have done has improved student success?
3. What limits student success?

The first question—What is student success?—concerns reliability. When we talk about student success, do we mean the same thing every time? When two individuals talk about student success, are they talking about the same thing? The second question—How do we know that what we have done has improved student success?—is one of internal validity. Internal validity concerns questions such as: What causes a student to be either successful or unsuccessful? The third question—What limits student success?—reflects a form of external validity. Are we able to generalize our knowledge about student success and apply it to different groups at different times? The third question thus gets to the core of this volume. If we are working to improve student success, what are the challenges we face and how can we overcome them?

What Is Student Success?

In looking at the role of institutions, Kuh and his colleagues conclude that "A common language also is essential to make the case for student success, so that people with different mental maps can more readily understand how their individual actions contribute to the 'big picture' of

institutional effectiveness" (Kuh et al., 2010, p. 298). The challenge in discussing such a mental map comes not from the lack of a model but from the presence of multiple models or taxonomies from which to choose. For example, both the National Association of Student Personnel Administrators and the National Postsecondary Education Cooperative (NPEC) Initiative, which sponsored the National Symposium on Postsecondary Student Success, have published taxonomies.

The taxonomy developed by the National Association of Student Personnel Administrators (NASPA, 2004)[1] identifies the capabilities and characteristics of a student and the outcomes of a student learning process. This taxonomy focuses on many aspects that are commonly referred to as cocurricular experiences. Student learning outcomes include:

1. **Cognitive complexity**: Critical and reflective thinking, effective reasoning, integration of emotional and cognitive perspectives, and intellectual flexibility.
2. **Knowledge acquisition, integration, and application**: Understanding knowledge from a range of disciplines and connecting that knowledge to other knowledge, to daily life, and to lifelong learning. Career decidedness and technical competence.
3. **Humanitarianism**: Understanding and appreciation of human differences. Cultural competence and a sense of social responsibility.
4. **Civic engagement**: Sense of civic responsibility and commitment to public life. Engaged in principled dissent and effective in leadership.
5. **Interpersonal and intrapersonal competence**: Realistic self-understanding. Mature personal attributes such as identity, self-esteem, confidence, and spiritual awareness. Ability to work with people different from self.
6. **Practical competence**: Capacity to manage one's personal affairs. Economic self-sufficiency and vocational competence. Maintenance of personal health with leisure pursuits and living a purposeful and satisfying life.
7. **Persistence and academic achievement**: Manage the college experience to achieve academic and personal success, leading to academic goals success to include graduation.

A second taxonomy, developed by Braxton (2006) in a monograph for the National Postsecondary Education Cooperative (NPEC) Initiative, which sponsored the National Symposium on Postsecondary Student Success, focuses on the centrality of academic learning in defining student success. It was developed based on a review of the literature. This taxonomy defines student success in terms of:

[1] Five of the seven factors are similar to those identified by Kuh and his colleagues (1993) from student interviews conducted in 1989. Kuh and his colleagues interviewed students to determine the "most important things" the students learned during college. The outcomes are adapted from NASPA, 2004, Table 1.

1. **Academic attainment**: Both academic learning as the amount of knowledge gained and also recognition of that knowledge to awarding grades, degrees, and certificates.
2. **Acquisition of general education**: A common experience in which success centers on the acquisition of a general knowledge of the arts and sciences and an appreciation of ideas.
3. **Development of academic competence**: Writing and speaking in a clear, correct, and effective manner; having mathematical skills and a competency in a foreign language; being able to organize and present ideas effectively.
4. **Development of cognitive skills and intellectual dispositions**: An assortment of general intellectual skills such as critical thinking and analytical and problem-solving skills, and the ability to synthesize knowledge.
5. **Occupational attainment**: Identifying and selecting a career and obtaining employment in one's career after graduation. This also includes receiving professional training for work the student wants to do.
6. **Preparation for adulthood and citizenship**: The development of social skills and personal habits important for adult living to include poise, leadership, budgeting time and effort, and effective management of task.
7. **Personal accomplishments**: Extracurricular achievements such as working on the college newspaper, serving on a committee, community service work, and responsibilities such as being a residential hall advisor.
8. **Personal development**: Personality development/adjustment and moral/philosophical development to include internal attributes such as self-esteem, as well as orientation toward the external world, such as learning from diversity.

As can be seen from the two examples, there are general themes that run through these taxonomies. Both models include an increased sense of knowing and of personal development, and as such they reflect the duality that the description of student success has historically had. At the same time, they possess a different level of granularity. The location of this granularity seems to depend on the purpose of the taxonomy and the background of the authors. The first taxonomy focuses on cocurricular outcomes, and the second taxonomy focuses on curricular outcomes. These two areas are the basic domains of two different groups of professionals—student affairs practitioners and academicians—who may define student success differently and do not always share values and experiences. Other organizations and individuals have provided numerous additional sets of desirable student learning and development outcomes. For example, the Counsel for the Advancement of Standards in Higher Education (Strayhorn, 2006) and the Essential Learning Outcomes from American Association of Colleges and Universities (http://www.aacu.org/leap/vision.cfm) have identified a set of 16 different types of desirable student learning and development outcomes.

College and university professionals generally recognize the complexity and diversity inherent in discussions on, and models for, student success. Pascarella and Terenzini address the issue of multiple measures of student outcomes extensively in both volumes of their work titled *How College Affects Students* (1991, 2005). They spend the second chapter of both volumes on the topic of "Theories and Models of Student Change in College." These chapters detail the theories and models that produce different definitions of student success. The interested reader is also referred to the papers and responses developed from the National Postsecondary Education Cooperative Initiative and National Symposium on Postsecondary Student Success held in November 2006 (http://nces.ed.gov/npec/papers.asp).

These works collectively position us to address Kuh's admonition about the need for a clear mental map and common language. A clear definition of student success does not seem to exist in the literature. It is apparent that organizations and institutions that want to support student success will need to clearly and specifically identify the specific aspects of student outcomes that are important to them, based on their mission, vision, values, and strategic plan. It will be through the discussions that grow out of these efforts that we can begin to clearly articulate how to define student success in higher education.

How Do We Know That What We Have Done Has Improved Student Success?

In identifying the effectiveness of educational programs, processes, and practices, we need to ask: What is the evidence that either the growth or the lack of growth (or the degree of achievement or lack of achievement of an outcome) is attributable to a specific college experience? Answering this question is necessary if we are to associate programmatic activity or university procedures with student success. If we want to say: "Student success for this learning outcome was a result of a specific experience," then we need to have a methodology for evaluating and affirming that this took place. Pascarella and Terenzini (2005) suggest organizing the evidence by answering the following six questions:

1. Do students change during the college years, and if so, how much and in what directions?
2. To what extent are these changes attributable to college attendance rather than to other influences, such as normal maturation or non-college experiences?
3. Are these changes differentially related to the kind of institution attended?
4. Are these changes related to differences in students' experiences at any given institution?
5. Are these changes differentially shaped by individual student characteristics?
6. Is the influence of college durable? (Pascarella & Terenzini, 2005, p. 571)

In the two volumes of their work *How College Affects Students*, these questions are used to evaluate the degree to which one can attribute changes to a specific institution or type of institutions. The argument is that after we establish an outcome, we need to establish why that outcome occurred. If something is being done that supports and enhances student success, we

should learn how to implement that aspect in additional institutions, taking into account the individual characteristics of each institution and its students. Conversely, if we find that something is limiting student success, we should stop doing it.[2]

Unfortunately, at the institutional level we are often limited by the ability to follow the rules of experimentation or even quasi-experimentation. This includes our difficulty in strategies such as random assignment, having multiple forms of the same program, and/or only having part of a class participate in a program. Fortunately, as attested by the chapters in the *Sourcebook*, there is evidence that has accumulated over time and that continues to accumulate that demonstrates types of institutional initiatives or practices that increase student success.

What Limits Student Success?

The factors that limit student success are complex and not fully understood. The chapters in the *Sourcebook* are intended to address this complexity by initiating an ongoing discussion that helps identify barriers that may be limiting student success.

The *Sourcebook* begins with perspectives on the institutional cultures and management that support student success and concludes with a president's perspective on the role of the institution in supporting student success.

The three chapters in the Introduction build the case for the relevance of the *Sourcebook* around three themes: culture, student success initiatives and research, and strategic enrollment management. First, culture as a pervasive force is discussed as a reason that many institutions may not be taking steps to make needed changes that are important to student success. Second, a review of the history of student success initiatives and research identifies current trends and proposes an approach for addressing issues surrounding student success. Third, a strategic view of managing enrollments is articulated and a strategy for moving forward is proposed. In a basic way, these chapters explain why creating a sourcebook is appropriate at this time. Much of our knowledge is fragmented and there is a need to have communication between institutional functions. This is designed to be a starting place to many of those separate pools of knowledge. We encourage the reader to start with these three chapters as we feel they provide a deeper understanding of student success. They also provide a context for how the topics discussed in the following chapters are related and can contribute to greater student success on our campuses.

Part 1 of the book focuses on the support of student success through developing effectiveness in areas that are institution-wide initiatives such as online learning and career education. Many of these initiatives are traditionally thought of as being associated with student affairs and cocurricular learning. Part 2 of the book focuses on specific subgroups of students—such as community college students, working students, and student athletes—in terms of supporting student success by meeting their unique needs. Part 3 focuses on topics of assessment and engagement and how activities in these areas enhance our understanding of student learning

[2] It is not pleasant to consider that we do things that disrupt students and limit their success, and that the preferred strategy in such a situation is to stop disrupting them.

in traditional academic-discipline-based curricula. Finally, Part 4 contains case studies that address the work of particular institutions in support of specific types of students.

Concluding comments include a president's perspective on how to make student success an institutional priority. As President Hall concludes: "No amount of believing in the axioms of student success by a president or a provost will produce the requisite culture. We must believe together." There is also an Epilogue with some final thoughts.

It is our belief that the *Sourcebook* will neither answer all of your questions nor be all things for all readers. We are fully cognizant of the incredible complexity of student success and the role that the institution plays in enhancing student persistence. We do hope, however, that this volume will be a starting place. Our goal is to provide a roadmap that begins the process of providing a comprehensive discussion of current issues and practices. We anticipate that you came to this resource because of a specific question or particular concern. We encourage you to read the Introduction to get a better understanding of the content and context of student success. In addition, we hope that we have included a chapter or more that addresses—and assists you—with your interest. If not, please contact CSRDE (csrde@ou.edu) and let us know as we are also on the journey to improve the way our institutions support student success.

The Consortium for Student Retention Data Exchange

The Consortium for Student Retention Data Exchange (CSRDE), the publisher of this volume, began in 1994 as a cooperative group of institutions sharing data on graduation and retention that were not otherwise available. Over the years the availability and usefulness of these data have significantly improved. Comparative data provided by CSRDE from similar institutions have enabled institutional representatives to work on behalf of student success with a broad range of academic, student support, and administrative functions at their institutions. CSRDE has broadened its mission to focus not only on sharing data, but also on sharing knowledge and innovation in order to achieve the highest levels of student success. In addition to retention and graduation rate benchmarking, the consortium facilitates networking and sharing of best practices through monthly webinars, the annual CSRDE Best Practices in Student Retention award, and the annual National Symposium on Student Retention. The symposium focuses on research and evidence-based strategies that impact student retention and completion, and provides a collegial atmosphere to facilitate networking and interaction among colleagues who are also interested in student success. Additionally, with access to the Effective Retention Practices Knowledgebase, CSRDE participants can retrieve the latest peer-reviewed research and model retention strategies.

The *Sourcebook* represents the next step in CSRDE's efforts. Its purpose is to enhance the bridges that institutions need to build between various activities, functions, and programs to optimize student success. While the chapters that follow cover a broad range of topics in academic and cocurricular learning, they also maintain a core focus on academic and student affairs management to include institutional research, curricular and cocurricular learning

outcomes assessment, and institutional effectiveness—all functions closely related to student success and its measurement. In short, the intent is to help the university manager gain a basic understanding of functions, methodologies, and measures key to supporting student success.

Acknowledgments

We wish to thank the Advisory Board of the CSRDE for their support of this volume. We would like to particularly acknowledge the hard work of Sandra Whalen, CSRDE Director, in making this book a reality, and of James P. Pappas, Ph.D., Vice President for University Outreach and Dean of the College of Liberal Studies at the University of Oklahoma, for his valuable support of this project and his support of CSRDE. We would also like to recognize our copy editors, Emily Jerman Schuster and Neal Schuster, for their help with this volume; Blake Cannon for developing the website application on which the *Sourcebook* is housed; and Jennifer Robertson for designing the book cover and website. In addition, we would also like to thank our families and employers for their support as we went through the editing process. We would also like to recognize Dr. Rosemary Hayes, former CSRDE Director, who had the vision to transform the data-sharing consortium into a community of learners concerned about student success by establishing the National Symposium on Student Retention. A final recognition goes to Theresa Smith, who helped found CSRDE in 1994 as a data-sharing consortium focused on improving the ability of institutions to benchmark their success in retaining and graduating students.

Finally, we would like to thank the authors who contributed their time and professional talent to make the *Sourcebook* a reality. We have enjoyed their work and have learned much from their comments. We commend their chapters to you as a means to expand your own opportunities to support student success.

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Charter Editors (2013)

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Building Bridges for Student Success

Introduction

Why is this *Sourcebook* necessary? The introduction to the *Sourcebook* builds the needed foundation for using the knowledge about student success found in the parts that follow the introduction. As later chapters will describe, we educators know a lot about what works for students. But, while there is more to learn, there has been less progress in supporting student success at many institutions than one might hope.

Much of the knowledge about how to support student success exists in silos, and this limits the ability of many institutions to use it in an effective change process. To share what is known and to continue to grow and build this body of knowledge we need to address the issues that limit our change. Frequently we need to recognize and overcome resistance in our organizational culture and build bridges between the silos.

To better anticipate change we can profit from knowing the past and understanding the changes that have occurred in what we know about student success. Within this context of growth and change, it is valuable, then, to have a conceptual model within which to frame our conversation. The introduction is organized to help facilitate understanding and applying the body of knowledge about student success. This will help you anticipate where change is leading, and in establishing a conceptual model within which you can structure the body of knowledge and further enhance the change process.

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Culture Bending to Foster Student Success

George Kuh
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If all you ever do is all you've ever done, then all you'll ever get is all you ever got.
—Texan quoted in T. Friedman, Hot, Flat and Crowded, *2008, p. 6*

There are few issues on which most business leaders, policy makers, government officials, and college and university leaders agree. One of them is the need to increase the number of people in the United States who pursue and complete a high quality postsecondary credential or degree. President Barack Obama and Lumina Foundation refer to this as The Big Goal—making it possible for about 60% of the adult population to obtain some form of postsecondary credential by 2025. Some refer to "the completion agenda" with a less-than-positive connotation, the implication being that the only way to reach the 60% goal is to lower standards so that almost everyone who starts a program of study can finish without much effort or, as a result, without learning very much.

Still others scoff at the notion that more college graduates are needed, pointing to the less-than-robust employment prospects for recent graduates, which is primarily a function of the lackluster recovery from a serious economic downturn. But as with the past, the current cycle of unemployment and underemployment will end, though the structure of the job market likely will be characterized by more part-time and fixed-term positions and will favor people with lifelong learning dispositions and entrepreneurial instincts. Too often overlooked in the "who should go to college" discussion is that our democratic way of life hinges on having more, better educated adults prepared to responsibly contend with the increasingly complex demands they encounter, no matter the nature of their work or position on the socio-economic ladder.

This chapter—indeed, this entire book—springs from the assertion that it is incumbent on virtually all colleges and universities to provide an undergraduate experience that results in high levels of learning and personal development for all students. For this to occur, we need to parse and emphasize the distinction between student persistence and student retention. The latter intimates that institutions bear the burden of keeping students in school. Certainly, colleges and universities must do their part to help students succeed. Student persistence is a more accurate and in some ways more palatable term, because it focuses on the conditions that institutions must create to motivate, inspire, cajole, or even require students to do the things that will benefit them in spite of obstacles or challenges. Said another way, finishing what they start and earning a degree or certificate are not entirely students' responsibility, but they require cooperation and

action on the part of many people, including students. Student success is the label commonly used to represent this desirable outcome.

Framing Student Success

Any comprehensive definition of student success must encompass the following student attributes:

- academic achievement at reasonably high levels;
- engagement in educationally purposeful activities;
- satisfaction with the postsecondary experience and learning environment;
- acquisition of desired knowledge, skills, competencies, and dispositions;
- persistence and attainment of educational objectives; and
- satisfactory post-college performance.

Under no circumstances should we accept the premise that student success represents program or degree completion *in the absence of evidence related to the criteria listed above.* That is, completion is a hollow accomplishment if graduates have not met rigorous academic standards, invested substantial time in educationally purposeful activities on and off the campus (which helps to inculcate habits of the mind and heart needed for later success), and demonstrated through various means that they know and can do what their program of study promised.

We have a pretty solid understanding of what student success looks like conceptually and empirically. For example, in the best summary of the research on college student learning and development, Pascarella and Terenzini (2005) concluded that "individual effort and involvement are the critical determinants of college impact [meaning that] institutions should focus on the ways they can shape their academic, interpersonal, and extracurricular offerings to encourage student engagement" (p. 602). We also know that "the greatest impact appears to stem from students' *total level* of campus engagement, particularly when academic, interpersonal, and extracurricular involvements are *mutually reinforcing*" (Pascarella & Terenzini, 2005, p. 647). Also, keep in mind that conditional effects are part of the outcomes equation, as some students benefit more from certain interventions, practices, and experiences than others.

More recent literature further clarifies what student success looks like and the characteristics of students and educational environments that are related to success. In 2006, the National Postsecondary Education Cooperative contracted with six teams of scholars to mine the extant literature and subsequently hosted an invitational symposium for about 700 policy makers, scholars, and practitioners at which these papers were presented and discussed. For reasons I still do not understand, this treasure trove of conceptual understanding and practical wisdom was not widely disseminated, though my group subsequently published its work (Kuh et al., 2007). The rest of the papers can be found at http://nces.ed.gov/npec/papers.asp.

But one doesn't have to scour the Internet to find accessible, informative analyses that describe the policies, programs, and practices that institutions have implemented to induce the kinds of student behaviors that are precursors to their success (Kuh et al., 2005/2010; Kuh et al., 2007; Tinto, 2012). Less frequently discussed is that the characteristics of effective teaching, learning, and student support programs and services are similar at all levels of education. That is, what works in the four-year postsecondary sector also works in two-year colleges as well as in K-12 settings, albeit with some modifications. For example, in its search for promising practices, the Center for Community College Student Engagement (CCCSE) is finding that many of the kinds of activities featured in the Association of American College and Universities (AAC&U) list of high-impact practices (Kuh, 2008) originally distilled from data from four-year institutions also are positively related to student success in the two-year sector (Center for Community College Student Engagement, 2011; Kuh & O'Donnell, 2013). In addition, the work of about 200 community colleges under the aegis of the Achieving the Dream (ATD) initiative is documenting interventions at two-year colleges that encourage more students to complete certificates and degrees. My experience participating in ATD meetings convinced me that the lessons learned from ATD are transferable and adaptable to other educational sectors. Finally, for now, many of the chapters in this volume offer details about individual programs and approaches that when well implemented can help students survive and thrive in college.

So, despite what is a rich, substantial literature to guide institutional improvement efforts, for various reasons too few colleges and universities have yet to intentionally create the requisite conditions to markedly increase the numbers of students who graduate. Why is this so? Why is it so difficult to systematically use what we know about how students learn and the policies and practices that both challenge and support students to put forth substantial effort, attain their educational aspirations, and demonstrate high levels of accomplishment?

Institutional Culture—the Nemesis of Improvement

As with implementing innovations or sustaining excellent performance in other arenas, many factors are in play when it comes to fostering student success. The factors that can make attaining student success difficult include:

- administrative inertia—staff may already be burdened with and all but paralyzed by increasing numbers of routine, bureaucratic tasks;
- competing agendas for such limited resources as time, money, and people—one must choose whether to reduce expenditures to increase efficiencies, enhance the quality of academic offerings by hiring more and better-qualified personnel, or make academic and student support services more effective; and
- a mismatch between student characteristics and the campus environment—student preferences for concrete, applied learning experiences such as service learning courses, learning communities, and internships are met with a steady stream of large, lecture-oriented classes.

To be sure, these nontrivial challenges must be addressed.

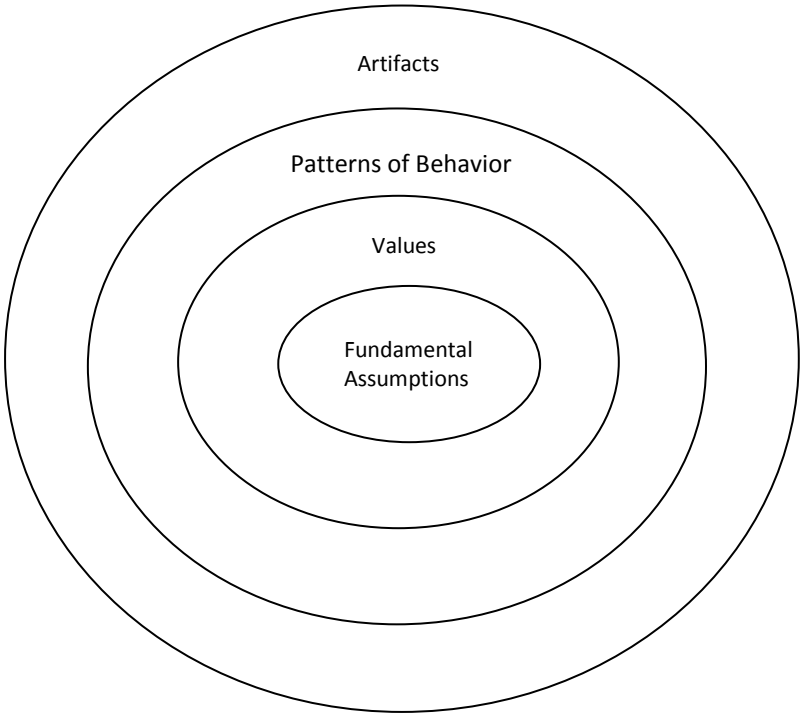
At the same time, another factor that virtually every study of organizational performance concludes is critical to effective performance is culture. In the context of a college or university, culture is important to student success because it exerts a powerful and consistent though largely tacit influence on how people think and what they can or cannot do.

Scores of definitions of culture exist. I have two favorite definitions. The first is one I had a hand in shaping: "The collective, mutually shaping patterns of norms, values, beliefs, and assumptions that guide the behavior of individuals and groups in an institution of higher education and provide a frame of reference within which to interpret the meaning of events and actions, on and off the campus" (Kuh & Whitt, 1988, pp. 12-13).

The second definition—ostensibly uttered by an MIT student and mercifully much shorter than mine—goes something like this: "Institutional culture is everything we aren't tested on in the classroom, but we need to know to get by" (Van Maanen, 1987). Boil down these two definitions along with most of the others that exist and it becomes clear that culture represents the unspoken rules and tacit understandings that dictate "the way we do things around here."

Culture is manifested across multiple layers, from visible, tangible properties to others that are increasingly tacit, as depicted in Figure 1 (adapted from Lundberg, 1990, and Schein, 1985, 1990).

Figure 1. Layers of culture



In the figure, *artifacts* are physical and verbal evidence of culture—what one can see or hear. They include written and oral historical accounts of heroes/heroines, myths, daily or periodic rituals, ceremonies, customs, interaction patterns, language, routine procedures, symbols, and symbolic actions.

Patterns of behavior are widely shared rules and norms that define and produce patterns of behavior—"the way we do things here." They include customs, routines, standard operating procedures, accepted style of attire, and formal and informal rules that determine whether behaviors are rewarded or sanctioned in some way.

Values represent widely held beliefs about the importance of certain activities, behaviors, feelings, relationships, and so forth. They sometimes are manifested in guiding principles or exhortations. They are often *espoused* but not necessarily *enacted* with the converse being true as well, which can result in conflict or tensions.

Fundamental assumptions are at the core of culture—tacit beliefs that undergird artifacts, behavioral patterns, and values. I mentioned an important one earlier—every student admitted can and should succeed here.

The Purposes of Culture

Culture serves multiple purposes. It is a source of identity for its members, helping them to distinguish their institution from other colleges and universities. Through language, normative actions, and physical artifacts, culture signals to newcomers and reminds current members how they are to behave, what warrants attention (or not), and what to value and believe. It lends stability and a sense of certainty to everyday life. In this sense, culture is the glue that holds people together and shapes how they respond when the winds of change come from unanticipated directions and in the direst circumstances the very survival of the organization is threatened. Said another way, culture is the source of continuity in the face of chaos. At its core, culture's central role is to preserve the status quo.

Preserving the status quo can be advantageous, especially for high-performing organizations. Eric Spoelstra, the coach of the Miami Heat professional basketball team, knows this: To enjoy "success in the NBA," he said, "you must have consistency of culture" (Beck, 2013, p. 9). Greg Popovich, the longtime coach of the San Antonio Spurs, also knows why the right kind of team culture matters. He said, "Continuity . . . breeds trust . . . camaraderie . . . a feeling of responsibility." This tacit sense of what is valued persists because the people buying into the way we do things here "endure, year after year" (Beck, 2013, p. 9).

The profound, enduring influence of culture is, generally, all well and good for strong-performing organizations.[1] But what does culture do for organizations that are struggling in areas

[1] I've overstated this point for the purposes of this chapter. Even high-performing organizations face cultural challenges, especially when the external environment changes dramatically in short order, which seems to be the new normal. In turn, organizations must change the way they do business, or go out of business. Jim Collins (2009) expands on this point in *How the Mighty Fall.*

critical to attaining their core mission, such as a college or university with low graduation rates? In such circumstances, culture may well be the major obstacle to organizing for student success, in that it discourages faculty, staff, and students from doing things differently or making good faith efforts to do different things. The Texan quoted by Thomas Friedman at the beginning of this chapter illustrates what can go wrong when we do things the same way over and over again, which is in no small part why we do not realize the improvement we seek.

For example, reward systems that favor independent performance over collaboration can militate against working together on common concerns such as enhancing student success. This begins to explain why even though certain policies, programs, and practices are known to enhance student performance (engaging pedagogies, student participation in high-impact practices, and experiences that require collaboration between academic and student affairs such as living-learning centers, learning communities, and service learning to name a few), relatively small numbers of students are exposed to such approaches.

Similarly, existing norms for what counts in promotion and tenure (scholarship over teaching and service) may discourage experimentation across a variety of tasks and signal to new faculty how they should spend their time. Left unaddressed, such behavior can morph into a "disengagement compact" (Kuh, 2003), so that faculty begin to ask less of students (few if any required papers or essay exams, for example), which means the faculty member spends less time reading student work or giving feedback to students. For their end of the bargain, students get acceptable grades for relatively little effort.

Culture's Bedeviling Nature

As with most people who write and talk about culture and its influence on organizational or institutional performance (e.g., Lundberg, 1990; Schein, 1990; Tierney, 1988), in this chapter I refer to culture in the singular form as if it were monolithic in nature. This implies that everyone—faculty, staff, and students, as well as members within each of these groups—share or endorse the same values, hold the same assumptions about teaching and learning, and interpret actions the same way. Of course, this is not so. There are many aspects of institutional life that are ambiguous or contested, which lead to (sometimes sharp) differences of opinion (Martin, 2002). For example, the norms of certain student groups, such as fraternities or athletic teams, are occasionally orthogonal to a college's espoused values (Kuh, 1990). To account for why such differences exist and how to try to reconcile them, it is helpful to ponder the role of mental models in making meaning of events and actions.

Mental models are made up of deeply ingrained assumptions, generalizations, and visual images that shape the way faculty, staff, students, and others behave and perceive the world and campus life. Most people are unaware of their mental models and how they reinforce routine actions and practices. Karen Arnold and I illustrated how the mental models of faculty members, student affairs professionals, and various groups of students differ, and how these mental models affect their interactions and their respective contributions to learning and institutional

performance (Arnold & Kuh, 1999). Identifying these mental models and how they differ, and comparing them side by side is an important first step in developing a shared view of what matters to student learning and educational attainment. The next step is to flesh out the assumptions about students and their learning at the core of the mental models, for these are inextricably tied to cultural norms and mores, which, in turn, influence how people interact and what they attend to.

When circumstances change, people must modify their mental models if they are to clarify and deepen their understanding of how these new circumstances will affect achieving the institution's core purposes. In terms of enhancing student success, an essential step is to surface and identify the assumptions people hold about students, what it takes for a student to succeed at the institution, and who is responsible for student success. For example, do faculty and staff favor a form of educational Darwinism, holding fast to the view that only highly motivated, well-prepared students deserve to graduate (implying high standards)? Or, do people assume that every student is worthy and capable of completing their program of studies and that the responsibility for their success is shared equally between students, faculty, and staff? At the strong-performing colleges and universities we studied (Kuh, 2005/2010), a pervasive ethic to which many faculty and staff subscribed was that student success is "everybody's business"—a shared responsibility.

Bending Culture to Promote Student Success

Too often, the quick-fix approach to enhancing student success is reorganizing offices and reporting lines. But as Tierney (1999) advises, to improve institutional effectiveness we should focus less on structure and more on culture. Relabeling office names, or reorganizing reporting lines and administrative structures may provide the illusion of change, but such moves typically do not result in deep cultural change—doing things differently, doing different things, or enhanced learning for students and overall improved performance of either the institution or students. Of course, organizational structures matter to a degree; how reporting lines are arranged may very well be an obstacle to changes needed to support student success. But most of what gets in the way of systemic change and improving organizational and student performance is not structure-dependent, but rather is cultural in nature. This is because people themselves determine the social contexts in which they work, "the entire spectrum of roles, responsibilities, expectations, and interactions" (Tiberius & Billson, 1991, p. 68).

It is beyond the scope of this chapter to lay out a detailed road map to outlining a campus culture change strategy congenial to student success. However, there are a handful of culture-bending principles that, taken together, provide a start by highlighting some of the key concepts. I use the term "culture-bending" throughout this chapter to emphasize how deeply rooted are the assumptions and beliefs at the core of an institutional culture and, therefore, how difficult it is to modify and replace these undergirding properties. Moreover, not everything about an institution's culture—certain traditions and rituals, for example—needs to change to improve

student success. For reasons amplified later, the prospect of "bending" or tweaking cultural properties has a better chance to succeed than attempting a major cultural overhaul in a short period of time (Collins, 2009).

Look for or Create a Propitious Time to Initiate Culture-Bending

Selecting the right time to initiate a culture-bending strategy is a key first step (Bolman & Deal, 1991). The effort might be introduced to coincide with the arrival of a new president, academic dean, or senior student affairs officer to capitalize on the uncertainty and expectations for change that often accompany the arrival of a new leader. In the wake of a cataclysmic event, such as the unexpected and untimely passing of a key institutional leader or a tragedy such as a tornado or fire that alters the campus landscape, faculty and staff may be willing with the right prompts by people they trust to question whether what they think and are doing are still effective, given the rendering changes in circumstances that have taken place beyond anyone's control.

Make a Clear, Compelling Case for Why Things Must Be Done Differently

Simply asserting cultural shifts are necessary, or presenting rational, data-based arguments about what needs to change, is not likely to be persuasive. Indeed, there is little about institutional culture that is rational. Debates about who is to blame or is responsible for poor student performance should be firmly discouraged. Also, eschew the premise that administrative structures and reporting lines are the problem, and look instead for cultural properties that discourage people from doing what the literature shows to be promising practices (Kuh et al., 2005/2010; Kuh & O'Donnell, 2013).

Senior faculty leaders as well as key administrators must champion, encourage, and periodically publicly affirm their commitment to the student success agenda, illustrate as often as possible how student success is congruent with the institution's strategic plan, and help create incentives and rewards for such efforts. Equally important is to get people to shift their mental models toward more congenial visions of what is needed to help students persist while at the same time preserving or even raising academic standards. Toward this end, pose to various groups such questions as, "What are we doing?" and "Why are we doing it this way?" These kinds of queries and the dialogue they evoke represent the ethic of positive restlessness that characterizes high-performing colleges and universities (Kuh, Kinzie, Schuh, & Whitt, 2011). The resulting discussions may help determine whether current routine practices are still relevant to the changing needs and interests of students and evolving institutional conditions.

Anecdotes, personal experience, and ad hominem approaches to culture-bending will not yield the desired results. A systematic approach grounded in the findings from something akin to a cultural audit has a better though far from assured chance to make a difference. Both results-oriented performance and the processes by which these results are achieved must be considered. The latter is a good indicator of the degree to which the institution's values are being enacted.

One immediate implication is that if colleges and universities are to improve student success, a comprehensive audit must be undertaken to identify which cultural properties are supportive of student success and which get in the way of students finishing what they start. Kuh et al. (2005) offer some ideas for how to do this. Additional materials to guide an audit of campus culture can be found in Kuh et al. (1991), especially Chapter 4 and Resource D.

Establish a Shared Vision and Common Language

Both large- and small-scale events can help an institution develop a shared vision for student success and become familiar and comfortable with a common language. "Working small" (Tierney, 1999, p. 166) means targeting specific norms or practices that may be at odds with increasing student success, such as continuing to offer only large lecture-dominant classes to first-year students. Making manageable changes that are consistent with best practices in a reasonable period of time demonstrates progress. Periodic large-scale events (Brigham, 1996) can feature a guest speaker or local successful interventions. They are occasions to bring together faculty, student affairs staff, students, and others to learn more about the relationships between their actions, institutional events, and consequences, some of which may have obvious short-term effects and others that may have subtle long-term consequences for students and the institution. Such periodic gatherings can help staff maintain focus on the student-success agenda, provide an occasion to publicly report progress on student-success metrics, and help avoid becoming distracted by other issues that will surely arise. These campus-wide events also provide much-needed opportunities for networking with other key players within and beyond the student affairs division and institution, which is essential in order to generate and sustain momentum and institutionalize changes.

Weave a Collaborative Ethic Into the Culture

At almost every college and university, institutional and student performance can be enhanced by building bridges between institutional silos. Most of the programs and policies that have the potential to foster student learning and success require collaboration among faculty, administrators, student affairs professionals, and others (Kuh et al., 2005/2010) so that functions, processes, and structures can be adapted appropriately throughout the organization (Garvin, 1993; Senge, 1990). Trust and goodwill are important; their absence can undercut even the most elegant, well-funded culture-bending strategy. Their absence can be ameliorated somewhat by intentionally creating partnerships and cross-functional collaboration that reflect the simultaneous "loose-tight" cybernetic properties of high-performing organizations (Collins, 2001). When a "we-they" mentality exists, system thinking and action is nearly impossible.

Perceived power and status differences between faculty and student affairs staff can exacerbate misunderstandings (Banta & Kuh, 1998; Schuh & Whitt, 1999). To communicate what needs to be accomplished, a common language is needed. The words and concepts that

inspire and support a culture-bending agenda must be crafted in a way that ensures clear communication across various campus units. Indeed, an assumption that is widely held is to compartmentalize the student experience into academic and nonacademic matters, and further assume that neither affects the other. This is fallacious; thoughts and feelings are interconnected. The heuristic mental models of faculty, student affairs staff, and students mentioned earlier (Arnold & Kuh, 1999) provide visual clarity for this.

Another way to expand in short order the number of people who are primed for collaboration is to send a cross-functional team to visit "model" programs at other institutions (Kuh & Hinkle, 2002). Such ventures are particularly powerful if the activities to be examined elsewhere have immediate direct implications for work back on campus. For example, I led a team of a dozen Indiana University Bloomington academic administrators, faculty members, and student affairs professionals to the University of Missouri-Columbia to see and hear firsthand from people like them about the promising educational practices being implemented at the sister school. This was critical for people to see firsthand the practical applications of the research and theory that support a number of interrelated undergraduate improvement efforts. Moreover, the trip introduced the participants to the vision and language of student success in a way that convinced key people that adopting promising practices was not only doable but preferable to the way the campus was currently operating (Hossler, Kuh, & Olsen, 2001).

Collaborations that put faculty and staff in contact with colleagues elsewhere can also be productive, as such support is invaluable for fostering change and innovation. Using a similar approach, institutes sponsored by AAC&U and grants made by the Teagle Foundation to support student learning outcomes assessment have been especially effective.

Put Money Where It Matters to Student Success

One aphorism relevant to culture-bending for student success is that following the money will lead one to discover what an institution values. It is seductively simple to presume looking at financial spreadsheets will point unambiguously to cultural values and beliefs. At the same time, ignoring the obvious will all but ensure failure to modify the institutional culture in ways that help promote student success. As Jane Wellman and other economists have determined, the amount of money an institution spends does not explain everything that accounts for strong rates of student persistence and graduation. In fact, intentionality—for example, requiring all first-year students to take a small, writing-intensive seminar as part of a learning community because this structured experience is positively related to persistence—matters as much or more than how much money an institution devotes to undergraduate education. But it is also clear that greater proportional allocations to instruction and student services are positively correlated to better learning outcomes and higher retention and graduation rates. It seems fair to conclude that institutions that earmark more money to activities that are linked to student success value student accomplishment more than those that spend disproportionately more money on other activities, such as institutionally supported faculty research or community service. In the final analysis,

where and how an institution deploys its resources—financial, human, and physical—are visible manifestations of what it values.

Anticipate Resistance

No matter how persuasive the case is made for culture-bending, the process challenges the status quo, which means that a number of people will be opposed to actions that appear to threaten their way of thinking and behaving; they are being asked to eschew some things to which they have invested substantial effort or learned over time defined the institution and themselves, and instead perhaps to revisit their ideas about what matters to student success. McLaughlin et al. (1998) likened the process to Kubler-Ross' stages of grief—denial, hostility, bargaining, depression, and acceptance—and offered suggestions for working through the stages.

Stay Focused

Distractions abound. Today's priorities quickly fade, replaced with the crisis du jour. Successful culture-bending requires a laser-like focus on what matters to student success. Doyle (2009) recounts the time when Richard Chait held a Q&A session about his book on university governance (Chait, Ryan, & Taylor, 2005) during which a CEO of a major corporation summarized his own strategy for pursuing organizational effectiveness with these words: "The main thing is to make sure the main thing *is* the main thing." What Chait and his colleagues used 100,000 words to say in their book, the business executive summarized in 14 words! For the purpose of culture-bending, the main thing is cultivating and sustaining an unshakeable focus on student success at every level and in every corner of the institution. I cannot overstate how long it takes for culture-bending efforts to take root.

Stay the Course

Culture-bending takes substantial time and effort. Some people equate culture with institutional climate measures, such as the results from surveys about faculty or student views toward current issues, for example using affirmative action principles in admissions decisions or the role and value of intercollegiate athletics. Views on such matters may be swayed by swings in popular opinion or even legal action. On the other hand, culture is rooted in fundamental assumptions that people hold about how the institution is supposed to work and who students are and what they are capable of. These are not subject to change easily; in fact, as I said earlier, culture exists to resist change. For this reason, champions of culture-bending must stay long enough for new traditions to supplant old ones and fundamental assumptions to morph into beliefs that are more congenial to student success.

Jim Collins' (2001) book, *From Good to Great*, profiled the most productive for-profit organizations in their respective sectors. How did they go from being in the pack to leading the

pack? "The good-to-great-transformations never happened in one fell swoop. There was no single defining action, no grand program, no one killer innovation, no solitary lucky break, no miracle moment. Sustainable transformations follow a predictable pattern of buildup and breakthrough" (Collins, 2001, p. 186). This is also true of sustainable culture-bending.

A more recent book, *How the Mighty Fall* (Collins, 2009), is based on a study of organizations that once were high-performing but for various reasons lost their market advantage. He and his research team began the study thinking that the productivity declines of struggling companies were a product of organizational hubris. Surprisingly, Collins found that it was overreaching, not complacency, that "much better explains how the once invincible self-destruct" (Collins, 2009, p. 47), with decline being largely self-inflicted, not a function of uncontrollable external circumstances. Moreover, he concluded that institutions that are headed in the wrong direction can reverse their fortunes, but it rarely comes in the form of a "silver bullet"—a breakthrough product in business, or the *au courant* developmental math intervention or high-impact practice required of all students. Culture bending over a long period of time, *not* "a dramatic cultural revolution" (Collins, 2009, p. 22), is almost always part of the recovery effort.

Last Words

The things we have to learn before we do them, we learn by doing them.
—*Aristotle,* Nicomachean Ethics

Culture-bending is more art than science. Blueprints do not exist to guide this work. The goal is to create a campus ethos wherein on a daily basis thousands of small gestures are extended to students by caring, supportive educators sprinkled throughout the institution who enact a talent development philosophy. We can never pay people enough to consistently behave in such a manner. Nor can a required orientation event introduce newcomers to such behavior and inculcate them to act this way. What prompts and sustains such action is an invisible web of values, beliefs, and assumptions manifested in reward systems and funding priorities that value student accomplishment and educational attainment. Another way to describe such an institution is to say it has a culture oriented to student success.

Student-success-oriented college and university cultures do not just happen. They are built and sustained over time by an enacted institutional mission and philosophy that features a deep commitment to student success from institutional leaders and senior faculty and staff who consistently use empirically verified practices in their teaching and academic and student-support functions. Finally, they periodically take stock as to whether their performance is congruent with the institution's stated goals for its students, and discard programs and services that no longer provide what students need to thrive in favor of more promising approaches.

Creating and sustaining a student-success-oriented culture is challenging, maybe even daunting work. But it is also rewarding and necessary if we are to deliver on higher education's promise to students and the nation.

May the Force be with us!

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The Student Success Movement: A Past to Project Its Future

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Looking at first-driven piers of new bridge construction suggests to the observer the placement of the next pier. Similarly, a historical look at the early and more recent developments related to student success oriented initiatives in higher education suggests two things: When the initial piers are collectively considered, they evidence an emergent *student success movement*. Second, the placement of those initial piers plus those piers now being set and driven in place suggest the student success movement's longer span toward the future.

Focusing on student success is not a new phenomenon. However, through the last half of the 20th century and first decade of the 21st, an emphasis on student success has gradually emerged as the greatest movement (or confluence of them) in all of American higher education's history.

The following is a greatly abbreviated and narrowly focused noncritical historical introduction to student success and the student success movement. By comprehending a bit of this past, we can celebrate the vision, giants, and accomplishments in student success over time and project the placement of future piers for colleges that are building bridges for student success.

Outcomes, Students, Stakeholders, Partnerships

Any attempt to define student success is a well-intentioned and admirable endeavor, though such efforts are delimited. The student success construct has been embedded in American higher education from its colonial outset to the present. However, "student success" in every era of American higher education has been limited in definition by the societal norms and operation of institutions at that time. In other words, student success has been defined by what society valued and expected at each particular time, and by what higher education institutions expected and did in that context and era to improve their then soon-to-be educated students. This became very evident with societal shifts reflected in new institutional outcomes and purposes, new types of students, new external stakeholders, and institutional responses that generated new partnerships, internal and external, for student success.

Outcomes/Purposes

In terms of outcomes illustrative of student success, student learning has always been the central outcome in higher education; however, the primary purposes driving the learning outcomes have shifted in priority and grown in number throughout time. Stark and Lattuca (1997, p. 25), building on a list of four purposes generated by Levine (1978), suggested six purposes for student learning:

Perennialism: teaching to develop the rational faculties of the mind;
Essentialism: teaching to transmit a prescribed knowledge, cultural heritage;
Progressivism: teaching to build on life experience (student-centered, problem-oriented);
Reconstructionism: teaching to reconstruct society;
Vocationalism: teaching to prepare for work/tasks; and
Valuism: teaching to enhance moral/spiritual/valuing development.

However, inclusive of learning there remains a mix of broadly stated assessable purposes for admitting, retaining, and supporting students that locally and/or globally define student success. Generally, some purposes are focused on the institution, some are focused on the student, and others are focused on both the institution's and the student's success. For example, in discussing the evolution of student development theory and student affairs, Strange (1994) emphasized that student success be considered in terms of student learning, student growth, and student development. In discussing strategic enrollment management, Borland (2001-2002) considered both the student and the institution as having various success-based purposes for the retention of students; these include learning, development, economic, curricular, and social purposes. Today, across American higher education, institutional leaders wrestle with what is known as the "iron triangle" of strategic enrollment management. That triangle consists of three interrelated and ever-shifting factors that contextualize and operationalize institutional and student success: access, affordability, and accountability for delivering or assurance of receiving a quality education (Immerwahr, Johnson, & Gasbarra, 2008). All three of the triangle's factors are associated with student success.

Students, Stakeholders, Partnerships

Regarding student success, both societal contextualization and institutional operationalization have varied over time within and between American higher education institutions. This has influenced the roles of students, external stakeholders, and institutions within existing and new student-success partnerships.

Before World War II, student success was predominantly if not entirely defined by the institution and dependent upon the student. Successful students met criteria published in institutionally composed catalogues and handbooks, conforming to and accomplishing these criteria in order to progress to a successful degree completion. They did this all with little, if any,

institution-provided support. Student success was a matter of independent effort by the student, which he or she accomplished primarily alone, or within informal supportive networks, rather than a result of a partnership of any kind with the institution.

In subsequent decades, societal values shifted regarding the provision of opportunities for the success and higher education of more citizens, as groups and as individuals. Though not without resistance on many campuses, in the last half of the 20th century (and continuing into the 21st) American colleges and universities had to become concerned with the admission, integration, assimilation, inclusion, and success of their new, less-traditional student bodies. Campuses' student bodies often became generationally different (even among legacies), and more diverse in terms of the total student body and its new subpopulations of students (first-generation, adult, women, underprepared, underrepresented, marginalized, etc.).

Then institutions also had to become concerned with a new type of assertive engagement on the part of external stakeholders: parents, institutional peers, accrediting agencies, and the government (federal and state). Each external stakeholder had its own perspectives on student success, perspectives not always in accord with those of internal stakeholders.

In response to the presence and voices of new generations of traditional students and new student subpopulations, as well as the demands of external stakeholders, institutions developed new options within entrance criteria, curricula, pedagogy, governance, residential and campus life, facilities, and academic growth and development services. Each of these is now considered to be a factor that can contribute to student success.

In order to maintain regional and professional accreditations and in response to peer definitions of quality, institutions had to develop a culture that fosters the assessment of student learning and evidence of effective institutional action to improve students' achievements. Student academic achievement and other institutional outcomes, and the institution's contribution, were clearly associated with student success.

Then, as the cost of attendance was increasingly passed on to students and the length of time to degree completion grew, governmental bodies, catalyzed by a national economic downturn, began to challenge institutions to engage with each leg of the iron triangle. Their challenge was that institutions admit, serve, and retain more students (access); reduce educational cost (affordability); graduate more students within a reduced time but with a high-quality education, and, finally, give account.

Summary

Through each era of American higher education from colonial times on, student success and failure remained a matter of concern to the student. However, over time, the set of learning outcomes shifted and grew, as did outcomes focused on student growth and development. These outcomes of interest to the student became increasingly shared concerns of external stakeholders. Eventually, there was a new student success partnership between the student, stakeholders, and the institution.

A Great Movement

Regarding the question of "Was there or is there a so-called student success movement?" one must first consider the various definitions of a movement. Merriam-Webster states that a movement can be defined as a "tendency" or a "trend." It can also be defined as "a series of organized activities working toward an objective; *also***:** an organized effort to promote or attain an end [the civil rights *movement*]" (http://www.merriam-webster.com/dictionary/movement).

To date, there has not been a national, exhaustive historical analysis to uncover influential student success leaders' individual visions and intentions, interactions with each other, or responses to a common position statement regarding national student success objectives and strategies. Nor has there been a meta-analysis of the entirety of these leaders' collective contributions and impacts. *Sans* an abundance of research-generated information on those factors, it is more intellectually accurate to conservatively refer to the student success movement in American higher education as a tendency or a trend rather than as a singular organized effort.

As such, through the last half of the 20th century and first decades of the 21st, student success gradually emerged from within the confluence of several great national movements largely due to the student-oriented passions and the creativity of those who now stand as "giants" in the student success movement. These scholars, professionals, and entrepreneurs developed one new groundbreaking theory, one new strategy, one new organization or network, one new business, one new publication, one new tool, one new policy, and one student success oriented and equipped institution at a time.

Through those decades and within societal contextualization and institutional operationalization, the enthusiasm, engagement, and momentum for student success grew to the level that it has arguably been made the highest observable national, state, and local priority in higher education today. It is difficult to imagine or to find a single undergraduate institution without student success values, goals, plans, budgets, personnel, and functions at the operational if not also the strategic level. In hindsight, we perceive the sometimes intentional and strategic efforts toward this end, but more often it was the serendipitous aggregation of student success supportive people, organizations, policies, and professionalism that generated this great movement. As a tendency or a trend, the student success movement became the greatest movement (or confluence of movements) in all of American higher education's history without the benefit or hindrance of a singular organized effort.

Of course, one should make arguments for the excellence and scale of the impacts made on student success by the sudden movement of millions of adult males into traditional higher education settings with the Servicemen's Readjustment Act of 1944 (P.L. 78-346, 58 Stat. 284m), known as the GI Bill. The GI Bill not only impacted these new students and their dependents in terms of access to and the affordability of higher education, but it shed a new light on institutions relative to nurturing the success of their new adult students. Several subsequent and wide-sweeping social movements also impacted student success for many Americans, as well as the institutions they attended.

The civil rights movement brought about the Civil Rights Act of 1964, Public Law No. 88–352, 78 Stat. 241 (July 2, 1964). This antidiscrimination law not only pushed open doors but indirectly generated a vision and actions for student success among and on behalf of those students who had been excluded. The women's movement was influential in the generation of Title IX of the Education Amendments of 1972, Public Law No. 92-318, 86 Stat. 235 (June 23, 1972), codified at 20 U.S.C. sections 1681 through 1688. Known as the Equal Opportunity in Education Act, it states, "No person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving federal financial assistance." This was a new opportunity for women to succeed in every aspect of higher education. The student movement, sometimes better known as overt campus protests in the late 1960s and early 1970s, generated campus-based demands. Those led to new student roles in campus governance, a more open and student-directed curriculum, and the practical end of *in loco parentis*. In turn, each of these gave rise to challenges and opportunities associated with student success.

These movements each yielded compounded dividends, not just for the first students but for succeeding generations of new college students. Access and affordability were provided for veterans, which subsequently enhanced preparation for their second generation college age dependents, and institutions learned how to enhance adult student success. The right of access to higher education for marginalized persons, women, and their descendants gave rise to concern and action to ensure all aspects of these students' success. Having a voice in educational institutions' governance, and being able to impact the academic direction and quality of the institution, as well as how students experienced life on campus, also affected the success of many American students as well as the institutions they attended.

All of these movements provided some students—especially adult, under-represented, women, and previously voiceless students—with greater opportunity for success and these initiatives continue to make positive impacts today. However, even collectively, these important movements did not intend to, or actually manage to, impact the success of all students.

One can argue that the student success movement has made an equal or even greater impact than these individual movements. For decades the student success movement has caused institutions to perceive holistically all students prior to and throughout their first year of higher education. The movement then progressed to striving to continuously improve the student-institution interaction and outcomes partnership throughout students' entire undergraduate experience.

The work of the movement continues at a swift pace as institutions aim more fully to know and serve students not only in their first year but from first recruitment through first alumni years. In one or many manifestations throughout history, a movement for student success has changed the college experience of every student. It has generated information and learning, which brought about change and improvement within many if not all higher education institutions. It has informed those who formulate policy. It has created an emerging higher education profession. In terms of its wide scope of concern and influence, its nearly universal

impact on students' success, its ubiquitous presence on undergraduate campuses of all types, its longevity and sustained enthusiasm, and its success without yet becoming a singular organized effort (though that may be emerging), it is fair to say the student success movement is an important, even crucial, part of American higher education.

The Giants

Be it a tendency, trend, or more and more a singular organized effort, the student success movement of today—like the movements resulting from other great ideas—is the result of the visible and defining work of number of "giants." It stands on the shoulders of these giants—the women and men, committed to higher education, who were pioneers, scholars, and leaders in championing student success.

Fortunately for all concerned with the future of student success initiatives, many of those giants are still engaged in the work of the student success movement. Their early and latest works are respected, their maturity and wisdom are welcome influences in further shaping the future of student success, and their inspiration continues to challenge and motivate those who now stand on their shoulders

Why look to these giants? The history of this phenomenon and how it was generated by these giants offer an important pool of lessons that might inform current practices and scholarship. The exploration of these giants' scholarship and practice through history provides a foundation for the next stages of student success knowledge development, innovation, articulation, celebration, and transfer.

Studying pioneers in student success sheds light on how student success was initially viewed by a traditional, narrowly student learning-oriented and non-partnering academy and by institutional leaders. More importantly, it provides lessons about how the pioneers broke that ground to eventually see student-institution partnering for student success emerge as valued within the academy and the institution.

Looking only at recent student success scholarship and literature can prevent practitioner-scholars from learning the valuable thinking, assumptions, contexts, mistakes, and successes that went into the creation of the movement. Recounting and appreciating the student success theories, research, and applications of the movement's giants throughout time is important for framing and guiding the next trajectory of student success scholarship.

Similar value can be gained by visiting the history of student success movement leadership. From what better source can today's movement leaders learn where and how to set the next piers for the nation and colleges that are building bridges for student success? Learn how the giants led.

If not examined, the student success movement is subject to lose some things of great significance: a sense of purpose, and academic and professional bearing. So, those who stand on the giants' shoulders today must ask two questions: Who are the giants of the student success

movement, upon whose shoulders we stand? What are (or were) their values, visions, issues, and ideas, and what would they suggest be ours?

Pioneers, Scholars, Leaders

Pioneers take the first steps to connect values to needs, to shape visions, and to communicate those visions to new audiences. Scholars pose theories, ask researchable questions, and generate working answers to describe what is or could be. Leaders pull together resources and people to animate the values, concretize the visions, and strategically plan and implement efforts to improve upon what is.

Within the student success movement, separating the giants into categories of pioneers, scholars, and leaders is often an artificial exercise because so many of the movement's giants made contributions in numerous ways. Even generally listing individuals as giants in the field is problematic and highly subjective without a broad-based, national method to establish acceptable criteria and a system of nomination and selection. Further, any description of a giant's contribution is incomplete or could be potentially misunderstood without extensive conversation with the giants and their contemporary collaborators. Nevertheless, with great respect for those champions listed, yet inadequately represented, here as well as for those deserving persons not yet within this list, the author suggests the following giants as a starting place for a study of the student success movement's past and consideration of its future.

Alexander W. Astin. Astin was an early author of widely consumed student success literature intended to address college student retention and the student experience. Two of his earlier and often cited volumes are *Preventing Students from Dropping Out* (1975) and *Four Critical Years* (1977). He also designed the Inputs-Environments-Outcomes (I-E-O) college "impact" model that became fundamental for theoretical and research studies working to explain how college affects students and their success. Astin was the founding director of the Higher Education Research Institute (HERI) (see below). He remains a vitally important contributor to the understanding of students and their various experiences as they relate to success in higher education.

Arthur W. Chickering. Chickering was an educational researcher focused on the field of student affairs and is credited with developing foundational research on college student development theory. Much of his work directly informs theoretical and practical approaches to student success. Among his numerous and influential publications are those focused on the success of a variety of students: *Commuting Versus Resident Students: Overcoming Educational Inequities of Living Off Campus* (1974), *The Modern American College: Responding to the New Realities of Diverse Students and a Changing Society* (1981), and *Improving Higher Education Environments for Adults: Responsive Programs and Services from Entry to Departure* (1989). Perhaps most widely regarded, are his two major collaborations: one with Zelda Gamson (1987) on the seven principles for good undergraduate student success, and the other, his psycho-social work focused on seven vectors of student development (1969), revised with Linda Reisser

(1993), which considers research, policy, and practice that encourage student development, or success.

Joseph Cuseo. Cuseo is included as a giant of the student success movement not so much in terms of his national visibility and contributions but as an example of what giants of student success have done to advance the movement locally, on their own campuses. These giants should also be studied for their values, vision, scholarship, and leadership with regard to student success. Professor emeritus of psychology at Marymount College (California), Cuseo directed the first-year seminar for more than 25 years. He created research-based guidelines for course design, delivery, and assessment in freshmen seminars. He is a regularly featured presenter at student success conferences focused on first-year experience. He authored several practical student success works including "Comprehensive Support for Students During the First Year of College" (2003) and *Thriving in College and Beyond: Research-Based Strategies for Academic Success and Personal Development* (2007).

John N. Gardner, Betsy O. Barefoot, and M. Stuart Hunter. These individuals represent the roots and future of the student success movement's "first-year experience" component and now its expanded focus to include "students in transition." Gardner became the founder of and is now senior fellow in the National Resource Center for the First-Year Experience and Students in Transition at the University of South Carolina, as well as president of the John N. Gardner Institute for Excellence in Undergraduate Education. He famously co-authored *The Freshman Year Experience* (1989) with M. Lee Upcraft and continues to champion student success throughout the undergraduate experience and first-year experience.

Barefoot was co-director for research and publications at the National Resource Center for the First-Year Experience and Students in Transition for 11 years and became vice president and senior scholar with the John N. Gardner Institute for Excellence in Undergraduate Education. As a writer, researcher, and teacher, she specialized in the development and scholarship of the first-year seminar and faculty roles, and in 1994 she developed one of the first comprehensive studies on freshman seminar, the *National Survey of Freshman Seminar Programs*: *Continuing Innovations in the Collegiate Curriculum* (1996). She is also lead author of *Achieving and Sustaining Institutional Excellence for the First Year of College* (2005), which documents a sponsored project to recognize colleges and universities as "Institutions of Excellence" in their design and execution of the first year. The value of this project is evidenced by the sponsors: the Pew Charitable Trusts, the Atlantic Philanthropies, and Lumina Foundation for Education.

Gardner and Barefoot consulted, published, and created national forums, giving a human face and voice to, and expertise and inspiration for student success on campuses across the country. Hunter became the associate vice president and executive director of the National Resource Center for The First-Year Experience and Students in Transition. She has been leading the recent expansion of the center's work beyond the first year to address sophomore and all students' success with transitions into, throughout, and beyond the baccalaureate experience (see Hunter et al., 2010).

Lee Noel and Randi Levitz. Noel and Levitz served as contributing editors of the newsletter *Recruitment and Retention in Higher Education* (Magna Publications) and co-authored publications in marketing, recruiting, student retention, quality service, organizational development, and institutional effectiveness. Their 1985 publication, *Increasing Student Retention: Effective Programs and Practices for Reducing the Dropout Rate*, drew the attention of many institutions coping with this challenging and new aspect in the work of student success. This team co-founded the nationally known business Noel-Levitz, which is focused on institutional effectiveness and innovation, and best known for consultation and products related to recruitment and retention strategies oriented to student success. Noel-Levitz has a 40-year history and has served more than 2,800 campus clients throughout North America and beyond (https://www.noellevitz.com).

C. Robert Pace and George Kuh. Pace, in 1979, developed the "Path for a Student Development and College Impress Model" published in his volume *Measuring Outcomes of College: Fifty Years of Findings and Recommendations for the Future* that clearly captured significant research and thought about student success. He is also considered a giant for the development of influential student success assessment instruments: College Characteristics Index (CCI); College Characteristics Analysis (CCA); College and University Environment Scales (CUES), and; the College Student Experiences Questionnaire (CSEQ). The CSEQ was co-authored by Kuh, who went on to found the National Survey of Student Engagement (NSSE) (http://cseq.iub.edu/condense_summary.cfm and http://cseq.iub.edu/remembering_a_giant.cfm).

NSSE examines time and effort students put into their studies and other educationally purposeful activities, and how institutions deploy resources and organize the curriculum and other learning opportunities to get students to participate in activities that decades of research studies show are linked to student learning (http://nsse.iub.edu/html/about.cfm). Kuh is also the author of *Student Success in College: Creating Conditions that Matter* (2005, 2010) based on the Documenting Effective Educational Practice project. He has also been prolific in scholarly publications as well as keynoting professional conferences to bring this student success research to practitioner application. Clearly, this giant's body of work, initially with Pace but soon well beyond his, is pivotal in comprehending student success through the lenses of data and practice.

Kenneth Feldman and Theodore Newcomb, and Ernest T. Pascarella and Patrick T. Terenzini. Feldman and Newcomb produced what has been called by those who stand on their shoulders a "landmark work." In *The Impact of College on Students* (1969), they offered the first comprehensive catalog and synthesis of decades of research (though it had really just begun). In 1991 Pascarella and Terenzini, themselves emerging as scholarly giants regarding student success, synthesized thousands of post-Feldman and Newcomb empirical studies on the impact of college on students. The body of research continued to grow at such a rapid pace that they updated that work in 2005. Due to an even greater expansion of such research, they are at present (2013) completing yet another synthesis of new scholarship on how college affects students. To grasp the research within what will soon be these four volumes of *How College Affects Students*

is not only to stand on the shoulders of these four authors, but to stand on the shoulders of thousands of researchers interested in student success.

Vincent Tinto. Tinto, a leading theorist in the field of higher education, has focused on student retention/attrition and learning communities, which are both important aspects of student success. He designed one of the first studies on attrition in U.S. higher education, particularly focused on attrition in the first year of college. "Leaving College: Rethinking the Causes and Cures of Student Attrition" (1987), which includes Tinto's Model of Institutional Departure, is described in this way by Education Resources Information Center (ERIC):

> The theory proposes that student departure may serve as a barometer of the social and intellectual health of college life as much as of the students' experiences at the college. The quality of faculty-student interaction and the student's integration into the school are central factors in student attrition. Attention is directed to features of retention programs, including the time of college actions and variations in policy necessary for different types of students and colleges. It is suggested that effective retention lies in the college's commitment to students. The content, structure, and evaluation methods for assessment of student retention and departure are considered, along with the use of assessment information for developing effective retention programs.
> (http://www.eric.ed.gov/ERICWebPortal/search/detailmini.jsp?_nfpb=true&_&ERICExtSearch_SearchValue_0=ED283416&ERICExtSearch_SearchType_0=no&accno=ED283416)

Tinto's model alone has been a theoretical framework for many additional studies and practices related to aspects of student success.

Giants' Piers and Next Piers

We must identify and learn as much as we can from the giants in the pioneering, scholarship, and leadership of the student success movement. Many of them have transitioned into semi- or full retirement. Some are gone, but their perspectives are still remembered by those who remain engaged in student success. If we do not learn from these giants' values, visions, challenges, and ideas now, we may never fully comprehend the why and where and how of their student success work and our own today, or where the next piers should be set to ensure the student success movement's future.

Partner Organizations

Numerous associations, institutes, centers, and businesses emerged from and/or have contributed as not-for-profit or for-profit partners within the student success movement. Associations have provided professional development and furthered knowledge through conferences, publications,

and professional networks. Institutes and centers have generated and disseminated strategic and cutting-edge thinking, scholarship, and projects with national implications. Businesses have advanced and disseminated specialized student success knowledge, often in the form of institution-specific research instruments, data generation and analysis, reporting instruments, technologies, and on-campus consultation. Associations, institutes, and businesses have greatly supported the student success movement and may have, through specialization and networking, influenced it as well.

The following list, though not comprehensive, is of influential partners and organizations that have contributed to the progress of the student success movement. These and others like them could play significantly expanded or new roles in student success in the future. Their past efforts and their potential participation in the future are worthy of consideration when building bridges for student success.

Associations

Many professional associations in higher education have, since their creation, made the core of their work about student success, and many did this long before the beginning of the student success movement. Others have joined the movement, some recently formed or others more recently adopting the cause of student success. A few are briefly described here:

The National Academic Advising Association (NACADA). Chartered in 1979, NACADA began to disseminate specifically developed information for academic advisors to help them successfully transition students to the academy (http://www.nacada.ksu.edu/About-Us/History.aspx). Through national and regional conferences, publication of journals, monographs, and books, and other means, NACADA operationalized and disseminated its vision "for the theory, delivery, application and advancement of academic advising to enhance student learning and development." The second of its mission statement's five points states, "Affirm the role of academic advising in student success and persistence, thereby supporting institutional mission and vitality" (http://www.nacada.ksu.edu/About-Us/Vision-and-Mission.aspx). NACADA's development of advising was and continues to be a strategic and significant contribution to the student success movement.

National Association of Student Personnel Administrators and American College Personnel Association (NASPA and ACPA, respectively). NASPA and ACPA were founded in 1919 and 1924, respectively. Between these two long-standing, large associations, members represent the vast majority of American higher education institutions. Variously stated but similarly committed, their decades-long focus has primarily been on institutional leadership and work associated with student affairs, all accomplished with an end to improve student learning, growth, and development. According to each association's website:

> NASPA [also known as Student Affairs Administrators in Higher Education] is the leading association for the advancement, health, and sustainability of the student affairs profession. We serve a full range of professionals who provide

> programs, experiences, and services that cultivate student learning and success in concert with the mission of our colleges and universities. (http://www.naspa.org/index.cfm)

> ACPA [also known as College Student Educators International] supports and fosters college student learning through the generation and dissemination of knowledge, which informs policies, practices and programs for student affairs professionals and the higher education community. [This is done through] . . . Education and development of the total student . . . [and] Advancement and dissemination of knowledge relevant to college students and their learning. (http://www2.myacpa.org/about-acpa)

With their relatively common approaches to student success, these two associations have been active contributors to the student success movement and may offer important indicators for the placement of the next piers when building bridges for student success.

National Orientation Directors' Association (NODA). An "association for orientation, transition, and retention in higher education" since 1976, NODA developed a strong link to student success movement purposes—specifically, successfully acclimating new students to their campuses (http://www.nodaweb.org/). Its primary focus has been on first-time students and it presently also focuses on the diversity of first-year and nontraditional students. As with most professional associations in higher education, NODA also serves to develop student success knowledge and professionals through its journal and other communications, and professional conference opportunities.

Association of College and University Housing Officers—International (ACUHO-I). ACUHO-I, since 1949, has served to advance the student's residential experience, a key element—of interest to both students and institutions—in student learning, growth, and development. Members have contributed knowledge and development regarding how residence halls can augment the academic experiences of students and have established student-success-related goals. According to the organization, students benefit from an enhanced quality of life, and students recognize campus housing as a transformative environment for leadership (http://www.acuho-i.org/?tabid=125).

American Library Association (ALA). The ALA, since the late 1990s, has recognized that librarians have an important place in helping first-year students adjust to college and the associated academic rigor. Beyond providing informational literacy and orientation and access to the physical and virtual hub of knowledge collection, librarians have eagerly involved themselves with first-year experience programs, collaborated with traditional student-success-oriented associations and campus units, and participated with the student success movement via the evolution of their task and position descriptions (http://www.ala.org/). A beautiful example is one library's collaborative leadership and space allocation for a $1 million project to establish an integrated learning commons on the library's main floor (Borland et al., 2012).

Institutes and Centers

There are numerous and variously oriented institutes, centers, and the like that have greatly contributed to and given much attention to specific aspects of the student success movement. Two of many are acknowledged here for their longstanding, impactful contributions to student success.

The Higher Education Research Institute (HERI). Affiliated with the University of California, Los Angeles, since 1973 and founded by Alexander Astin, HERI has produced an interdisciplinary approach to policy studies, information, research, and evaluation in postsecondary education. Of particular value to student success is the massive longitudinal data set generated by the widely engaged Cooperative Institutional Research Program (CIRP). HERI annually produces and disseminates the results of the CIRP Freshman Survey. According to HERI:

> The survey covers a wide range of student characteristics: parental income and education, ethnicity, and other demographic items; financial aid; secondary school achievement and activities; educational and career plans; and values, attitudes, beliefs, and self-concept. Published annually . . . the results from these surveys continue to provide a comprehensive portrait of the changing character of entering students and American society at large. (http://www.heri.ucla.edu/)

These surveys have informed institutional administrators and external stakeholders about the characteristics, beliefs, and values of their first-year students as well as, over the years, national trends about ever-evolving students. The work of HERI provides a perspective valuable for institutions desiring to enhance student success.

The National Resource Center for the First-Year Experience and Students in Transition. Located at the University of South Carolina and tracing its roots to 1970 and the 1982 advent of "University 101," under John Gardner's leadership, this center led the way in developing national and international conferences on the first-year experience. Under Betsy Barefoot, the center generated a corpus of literature that reached and influenced first-year programs on campuses around the country. In recent years, under M. Stuart Hunter, the center's interest and leadership have expanded beyond the first year experience to student transitions into, through, and beyond the baccalaureate experience.

Without the visionary, creative, entrepreneurial, and communication contributions of this institute and center, and the many campus practitioners and leaders shaped by their work, a national student success movement may never have emerged or moved as rapidly and effectively to positively impact so many students on nearly every American campus.

Businesses

It is noteworthy that an American entrepreneurial spirit has contributed much to the advancement of the student success movement. Major publishers and their editors supported authors who sought to, independent of or in collaboration with associations or businesses, describe student success research and best practices through books, monographs, and journals. Private companies created specialized software and systems wherein faculty and staff communicate with one another about students' success concerns, analyze and track student engagement with professionals as well as student progress, manage more data than ever before about students (individually and by cohorts), and even connect to national databases intended to enhance student success. Without intending to serve as an endorsement, two examples of these offerings are Nuventive's TracDat, which links to accreditation and is geared toward continuous improvement, and Ellucian's Banner, among other student-success-oriented products (http://nuventive.com; http://www.ellucian.com/Solutions/Ellucian-Student-Success/).

Beyond the big publishing houses and communication and data systems, there was an emergence of student success consulting. Some student success pioneers mentioned above (such as Noel, who consulted with more than 400 institutions, Levitz, Gardner, and Barefoot) and their close colleagues (e.g., David Crockett, advising and Teresa Farnum, enrollment management), began to serve the movement with tailored, campus-specific knowledge for institutional and student success practice. Their work is being carried forward by succeeding generations in the same companies, as well as spin-offs and emerging entrepreneurial companies with specialized knowledge regarding records and registration, curriculum, services, auxiliaries, and strategic enrollment management. Without intending to offer an endorsement, in the last decade or two Jim Black founded SEM Works, focused on strategic enrollment management, and Teresa Farnum` established Teresa Farnum and Associates, focused on recruitment, retention, and graduation of students (http://www.semworks.net/; http://www.teresafarnum.com/).

Partners and Next Piers

By partnering with external organizations, the student success movement avoided becoming one narrowly specialized, tightly controlled enterprise. Arguably, the independence and collaboration of partner associations, institutes and centers, and businesses strengthened student success both nationally and on each campus. However, in an era when institutions of higher education are reducing budgets for engagement in external networks and services such as these, what will become of the partnerships? How can these relationships be sustained and made more efficient, effective, or different in order to ensure an even brighter future of student success? What will these partnerships now suggest about the next piers in the bridge to student success?

Policy and Profession

Throughout the history of American higher education, institutions of higher education have struggled to resolve versions of three major issues that are today being addressed by internal and external policymakers. The three issues are access, affordability, and accountability for or assurance of quality, and they are directly related to student success. Together, these concerns are referred to as the "Iron Triangle."

Professions within American higher education have also emerged. The historical professionalization of administrators, then the faculty, and eventually student affairs practitioners has shaped each group's thought and work. However, these professions neither fully owned nor shaped the student success movement, and a student success profession has not yet evolved.

A brief review of access, affordability, and accountability for or assurance of quality with a view to student success policy, and a similar process regarding the potential emergence of a student success profession, may also inform and influence placement of the next piers toward student success.

Access

For decades, those involved in the student success movement have purposed to improve upon the present state of access within each institution they touch with research, publications, consultation, and daily professional practice. As a result, recruitment, orientation, advising, first-year courses, and retention policies of all types (sometimes rooted in strategic plans) have been locally crafted and adopted by virtually every U.S. institution. These manifestations of the student success movement contributed to improved student assimilation into the institution and discipline. The student success movement, continuing in the confluence of the other movements mentioned above, has been a friend to the inclusion of diverse students, whom many institutions now address in strategic policy and planning decisions.

Transfer and articulation agreements between two- and four-year institutions, programs and services designed for returning veterans, creation of new means for high school students to complete college credit before college matriculation, distance education, disability services, developmental curriculum, and more are access policies primarily born out of the student success movement.

Affordability

Similarly, many fiscal policies and strategies have been devised to make higher education affordable with regard to the economy and out of sensitivity to students and their families. These decisions are in keeping with the principles and philosophies traceable to the student success movement. Offering campus-based financial advising and services, linking tuition and fee policy to matters of access and student success, and sustaining and creating services that yield not only

"bang for the buck" but also student success have been the result of changed fiscal policies. State and federal entities have also recognized the matters of access and affordability and have devised loan and grant strategies to help families send students into success.

Accountability for and Assurance of Quality

Stakeholders at the state and national levels, as well as professional and regional accreditation bodies, are increasingly concerned with the quality of higher education being provided. As a result, expectations of institutional accountability for the resources invested in education and institutional assurance of educational quality have sharply risen. In light of this, institutions have strategically invested in efforts to improve student success.

States that have invested tax revenues in support of state-owned and state-related institutions of higher education and that are concerned about citizens paying more for tuition and fees have generated and utilized standardized reporting systems, the results of which have fed into state decision making. Among the state-level decisions being made are those regarding higher education policy and funding. Institutions have complied in providing much more state-requested data, concerning themselves with new policy initiatives such as efforts for high schools to be able to deliver college-level curriculum, and budgeting based upon performance funding.

The federal government's National Center for Educational Statistics (NCES) has been a major force in institutional leaders becoming more data literate with regard to their faculty, staff, finances, and students. Further, while the U.S. system of accreditation in higher education is peer-based, federal agendas have been communicated to and comprehended by the regional and professional accrediting bodies. Like the states, the federal government invests great resources in the work of higher education institutions and the education of American families. The federal government is interested in seeing its support used responsibly, with an assurance of accountability for the resources it provides, as well as for quality fiscal and learning value.

This interest in accountability for and assurance of quality higher education was accentuated by regional and professional accreditation bodies. Accrediting bodies, made up of peer institutions, began to expect assessments of student learning relative to stated educational and institutional goals. Initially, the assessments only consisted of measures and evaluations; however, they soon matured into measures, evaluations, plans for improvement, and demonstrations of improvement. Today, all institutions in American higher education are asked for demonstrations of both academic and institutional accomplishments that show effectiveness in reaching goals and in making assessment-informed improvements in quality.

Many efforts to improve educational quality have been focused on student success. This is evident not only in the development of and continuing improvement of first-year curriculum and programs, but also in efforts to address the "sophomore slump," in the creation of senior capstone courses that pull together general and specialized learning, in initiatives to help seniors transition into post-college life, in living-learning strategies, and in advances in education technology and informational access and literacy. These efforts to improve educational quality

also encourage students to carry their share of responsibility for their developmental and academic successes.

New Professionals

The student success movement significantly contributed to the establishment of new work, jobs, and positions within higher education. Over time, those who populated those positions gradually emerged from their isolation and specializations into what could be considered a cadre within a developing higher education profession. Together, they initially focused on students' early success and then on students' entire collegiate success. Now they focus on students' success throughout the entire student lifecycle while strategically considering the success of the institution.

These professionals became highly skilled in recruiting, orienting, and acclimating new students to an unfamiliar environment, assimilating them into the academy and institution, linking student learning and development in the curricular and the co-curricular, responding to students' encounters with learning and developmental barriers, and supporting positive transitions out of the undergraduate experience into the students' next phase of education or work; that is, these professionals became highly skilled in facilitating student success.

They did this in local institutional structures, contexts, and cultures. They contributed to a growing body of knowledge, nationally recognized best thoughts and practices, and scholarship, and to an array of professional development, publication, and networking opportunities. The larger context for professional student success work is now a highly competitive marketplace that includes institutions, associations, institutes, and corporations. Yet these student success movement professionals have collectively become the basis for a new field, which merges student success and institutional interests: strategic enrollment management.

From Movement to Established Profession

Despite how far the student success movement has come, is it possible for work focused on student success to move from being an arguably serendipitously emerging profession to an organized and established one? And, if that is desirable, what is the next work to be done in the field?

According to Kubow and Fossum (2007), professionals are required to exercise authority and are given autonomy to make decisions. With that autonomy comes responsibility to professionalize the field. Wickenden (1949) presents a paradigm of professionalism and argues that professionals:

- possess specialized training in order to give specialized services,
- have confidential relationships with those individuals they serve,
- are obligated to help the public,
- act ethically,

- work for the common good, and
- share a common knowledge base and history.

Wickenden's concept of professionalism gives the professionals in the student success movement a foundation from which to operate on campuses, and Kubow and Fossum remind professionals of their responsibility to professionalize the student success movement.

Future Policy and Profession Piers

Those who generate local, state, and national policy regarding access, affordability, and accountability for and assurance of quality should have by now been well-informed by the research, thought, and intervention of the student success movement. The policy question for the future may be: Will the student success movement begin to intentionally drive the development and implementation of improved or new policies at the campus, state, and national levels?

Such a policy agenda, policy-shaping leadership, and political action may require the creation of a new student success profession. So, we ask, who will call for the professionalization of the work that developed from the student success movement as well as of the new field of strategic enrollment management?

Will the student success movement become an organized (if not ideally unified) profession that strikes a balance between openly sharing and protecting proprietary knowledge in order to deliver its professionals the very best specialized training, development, and graduate education? Will a relative paucity of master's and doctoral programs focused on student success and strategic enrollment management limit the development of professionals and the profession? The pioneers, early scholars, and leaders built a strong foundation: Will the emerging profession add to the giants' work by turning their concepts and theories into a recognized discipline within the academy?

Will there be a call from an organized profession to commonly and holistically capture its presently proprietary, dispersed, and even fugitive knowledge base? Will there be a profession-based call to further develop goals beyond an ad hoc agenda, often driven by current social and institutional stimuli, to purposefully and strategically identify the core of existing knowledge and develop new knowledge from testing new theory and assessing the impact of new practices? Existing higher education associations and institutes/centers, such as NACADA, NODA, and the National Resource Center on the First Year Experience and Students in Transition, as well as the leaders, scholars, pioneers, conferees, and mature practitioners in student-success-related fields could provide some key guidance in answering these questions.

Will there be a level of confidentiality and a shared code of ethics that extend beyond Council for the Advancement for Standards in Higher Education (CAS) and Federal regulations such as FERPA and HIPAA, and a commitment to public (rather than self or institutional) service? Will an interest in the common good drive student success movement and strategic enrollment professionals individually or collectively into the realm of not only informing but shaping public policy for both student and institutional success?

Will there be commonly understood student success professional tasks and positions? And will institutions of higher education elevate not only the agenda item of student success but also professionals generated by the student success movement to cabinet-level positions of responsibility?

Conclusion

When considering placement of the new piers of a bridge under construction, look at the piers that were driven in first. When it comes to building bridges for student success, look to the first piers - the early foundations - of the student success movement, the greatest movement in the history of American higher education.

Great value remains to be found in examining the independent and cooperative work of the student success movement's giants, on whose shoulders those about to drive the next piers of student success should stand. These giants' first-driven piers represent critically important cross-organizational cooperation, communication, and partnerships. Their successful efforts also suggest that student success initiatives must not become only a strategic component of institutional success and operations. Instead, there is a critically important need for advanced professional development for those who are to define and lead the next phase of the student success movement and the new field of strategic enrollment management. This is because those who set the next piers of student success and strategic enrollment management must engage policy and the profession to shape them both.

To more fully comprehend, anticipate, and determine placement of the next piers of the future of the student success movement, we must identify and celebrate the people, organizations, policies, and profession engaged with furthering student success. In addition, we must ask questions about the future role of student success participants as professionals not only in practice but in the development of student success policy and a student success profession. In doing this, we will encourage and facilitate student-institutional partnerships that yield even greater student success.

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A Framework for Strategically Managing Enrollment for Retention and Degree Completion

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"Student success" can be understood in its simplest form as getting students into and through college to a degree or certificate. (Ewell & Wellman, 2007)

The purpose of this chapter is to discuss a framework for the strategic management of enrollment that sets retention at the center of institutional effort by binding retention and degree completion with core institutional processes and recognizing retention as a measure of institutional success. As Kuh notes in the opening chapter, degree completion in this context means graduates who have met rigorous academic standards, invested substantial time in educationally purposeful activities, and demonstrated that they know and can do what their program of study promised. We discuss this framework as an adaptation of the performance-management tool Balanced Scorecard, with its four primary components of institutional and student profile, student progress, educational processes, and institutional brand promise—the 4 Ps of student retention (Kalsbeek, 2013). The enrollment leader is well-positioned to create and reinforce an institutional strategy aimed at student success. We outline the steps in implementing the resulting strategies: comprehension, communication, commitment, and collaboration. In the final section of this chapter, we provide an outline of some of the key analytics that support fact-based and data-informed decision making in strategic enrollment management. We conclude the chapter with some closing thoughts.

An Institutional Definition of Student Success

In higher education we have no hesitation in discussing student success. It can be defined for different students in different ways: by deep and broad learning in a discipline, social engagement and integration in a community, personal development, participation in high impact

experiences, interaction with diverse peers, global and intercultural understanding, attainment of employment upon graduation, aspiration for graduate studies, cumulative grades, and/or degree completion. The chapters in the *Sourcebook* address many of these different perspectives. They describe numerous programs an institution can implement to facilitate many of these different types of success. In fact, many of these student outcomes are mentioned in various institutional mission statements, and perhaps student success is one of these specific outcomes or a combination of all of these things.

Is an institutional successful if it provides some or all of these outcomes for some or all of its students? What if only some students benefit from some of these "desired outcomes" some of the time? It is challenging to make a judgment about institutional success with regard to this array of aspirations, although many people across the institution are passionately engaged in associated programs. This chapter poses the idea that institutional success should be strategically managed and concisely defined so that the overarching measure of success from an institutional perspective is student progress and degree completion for the greatest number of students who come through the doors (or online portals). Having student progress and degree completion as the unifying focus gives the institution the foundation for a strategic agenda.

Binding institutional success with improved degree completion is a stance that is in line with government calls for accountability in higher education and is sensitive to students' long-term commitment of time, effort, and financial resources.[1] In addition, work by Kuh et al. (2010) and Pascarella and Terenzini (1991, 2005) among others have associated numerous curricular and cocurricular learning outcomes with student retention and completion, and so the quality of completion matters.

There are numerous reasons why the completion agenda has taken prominence in the higher education landscape. Perhaps the *Spellings Commission Report* of 2006 was a turning point from which higher education cannot retreat. Then, the nascent "accountability movement" was a reflection of frustration with persistent inequality of outcomes for students across all educational levels, and a manifestation of the growing public cynicism about the value of higher education in general. Spurred on by critical reports on higher education and studies such as *Academically Adrift* (Arum & Roska, 2011), federal and state governments, think tanks, foundations, economic organizations, national security entities, and the military have all recently expressed grave concerns about falling attainment in young adults in the nation, and the need for a "Sputnik moment" to drive postsecondary completions. Sadly, despite growing attention to student persistence and completion in recent years, the average graduation rates by institutional sector have remained stagnant. The most recent report from the Lumina Foundation asserts that completions, while rising slightly across the nation, show massive and persistent gaps by race, income, and other socioeconomic factors. "Our pace of attainment has been too slow and America is now facing a troubling talent gap. If we intend to address this problem, new strategies

[1] It should be noted that this commitment to student completion is for student completion of quality degrees in which the student gains the knowledge and learning commensurate with the degree or certificate awarded. For example, see Ewell (2013) on the discussion of assessing learning within the Degree Qualifications Profile.

are required and a heightened sense of urgency is needed among policymakers, business leaders and higher education institutions across our nation" (Lumina, 2013). On an institution-by-institution basis, we have to do better. Who is in a position to lead this drive? Who is responsible and accountable for ensuring that more students graduate with a degree or earn a certification that helps them be skilled, independent, contributing members of society?

The Role of Enrollment Management in Managing Enrollments

Enrollment managers are among the staff most strongly positioned for this task. They understand more than anyone else in the academy what characteristics students in the pipeline possess, and enrollment leaders should be able to assess what is new on the horizon in terms of P-20 systemic alignments, emerging assessments of K-12 students to demonstrate college readiness, as well as demand for emerging technologies that create new options for learning and degree attainment. However, the work of enrollment managers is often misunderstood and sometimes maligned for bringing "winner-take-all" market-driven competition to higher education.

Despite these criticisms, the need for sophisticated and strategic enrollment managers is recognized, even in the blunt and on-point assessment of enrollment management in the 2005 *Atlantic Monthly* article by Matthew Quick titled "The Best Class Money Can Buy." While "exposing" how enrollment management engages in the extensive use of data mining, financial aid leveraging, and other consumer pricing models borrowed from the airline industry, practices that some say are "ruining American higher education," Quick also acknowledges that balance can be achieved between market and mission if institutions make the commitment to do so:

> But some in the industry use its techniques responsibly—to guarantee enough revenue to support the academic mission, or even to expand low-income access to higher education. Indeed, the sophisticated methods of enrollment management may be the only way for schools to hang on to their principles while surviving in a cutthroat marketplace. (Quick, 2005)

In a recent refresh of their 2009 comprehensive piece on strategic enrollment management, Don Hossler and David Kalsbeek reiterate that the untenable alternative to enrollment management is for institutions to not plan for and not manage their enrollment, to just let it happen (Hossler & Kalsbeek, 2013). They assert that there is no possible return to an imagined "golden era" when enrollment practices "exhibited greater integrity and reflected some higher order values" (p. 2). Today, the stakes are too high for institutions to not employ a disciplined and strategic enrollment management perspective. The chance for institutional success is much higher when a knowledgeable and adept enrollment leader uses the range of tools available at his/her disposal.

At our institution, we do not hide from market language: "The mission of the Division of Enrollment Management & Marketing (EMM) is to improve and enhance DePaul University's competitive market position and prominence." Beneath this seemingly simple phrase lies considerable complexity that should be unpacked to understand how enrollment managers are

positioned to lead institutional success. Market position is a fairly static condition for a given institution that can be measured with moderate precision. Market position is a context that can only be changed through intentional decisions and strategies that either raise the prominence and desirability of the institution in the minds of prospective students, that take advantage of shifting conditions or declines among peer institutions, or that fill gaps in student demand in popular or emerging academic programs. The level of competition in higher education is intense in some markets/regions and less so in others, and unfortunately, institutional prominence or reputation is often determined more by misinformation, emotional reactions, and long-standing assumptions than by evidence-based data and information on student outcomes. Students and families often make college choice decisions on existing perceptions or on capricious bits of information gained in various settings. With so much at stake for individuals and for overall human capital development, decision-making that is not based on evidence and rational understanding is harmful. Enrollment strategies can help sort students into appropriate educational settings where they have the greatest chance for success. With rapidly changing demographics and falling numbers of students who have historically participated in higher education, enrollment management is, of necessity, at the forefront of institutional survival and sustainability. The enrollment leader is a key player in institutional success for the foreseeable future.

Developing an Institutional Strategy for Managing Enrollments

Student success defined as retention with progress toward completion comes with many perspectives and with many observable outcomes. A large number of these perspectives are discussed as chapters in this volume. This chapter is conceptually different. It looks at *institutional* success in managing enrollments where that management enhances student success. Specifically it addresses the question: How does an institution best and strategically manage enrollments in which the foundation of institutional success is having students who are successful in making progress and completing their degrees? Graduation with a high quality degree is our definition of success.

Why look at success from the perspective of the institution? The boundaries of the decision-making space are constrained by the aspects of the institution. For example, these aspects specifically relate to the current and anticipated resources of the institution; the mission and goals of the institution; the knowledge, skills, and ability of the faculty and the functional business areas; the breadth and intensity of the disciplines offered by the curriculum; and the market space of the students and feasible students. The institution develops, implements, and refines strategies that result in student outcomes. It monitors the outcomes of these strategies and makes adjustments in policies and procedures. Student success must be viewed from the perspective of the institution if that institution wants to strategically use its resources for that purpose.

In the private sector, when companies were faced with the need to develop strategies, they initially focused on profit. As it became increasingly apparent that a myopic profit strategy did not produce a corporate capability to sustain and increase profits, various perspectives were

developed to produce the required coherent capabilities. One of these perspectives resulted in what is known as the Balanced Scorecard (Kaplan & Norton, 1992, 1996, 2001).

Applying the 4 Ps Framework: Profile, Progress, Process, and Promise

The Balanced Scorecard gave the company the ability to look at its key processes and to align those processes with desirable outcomes. The following is a description of how a similar initiative was implemented with those who manage enrollments at DePaul. In an attempt to reframe the student retention discussion and foster commitment across the university, DePaul University developed and embraced the 4 Ps framework for its student retention strategy. The 4 Ps framework reorients the university's perspective in ways that engender commitment to a measurable outcome for students: improved degree completion. The 4 Ps framework opens new possibilities for action and improvement by suggesting that institutions embrace the following concepts[2]:

- Graduation rates are institutional attributes as much as they are institutional accomplishments and are largely a function of institutional and student *profile*. Using just a few variables about an institution's academic and financial profile, retention and completion rates can be predicted with moderate accuracy; "even with only one institutional characteristic—the average ACT or SAT score of the freshman class—one can account for over three-fourths of the variance in institutional graduation rates" (Kalsbeek, 2013, p. 8). Institutional profile includes residential capacity, financial assets per student, percent full-time versus part-time students and faculty, and other measurable characteristics (Kalsbeek, 2013). This profile is comparable to the financial aspects of the corporate model, the Resource Perspective. It represents the financial and resource constraints of the college. While colleges are not all designed to make a profit, those that seek to be sustainable must have an appropriate business model. Revenues need to balance expenditures.[3] In terms of finance, this sustainability is frequently summarized by the Consolidated Financial Index. In terms of traditional characteristics, one often looks at endowment per FTE student and various measures of wealth and capitalization. Much of the resource profile of the institution can be obtained from the Integrated Postsecondary Education Data System (IPEDS) data set for institutional finance. Just as finance is a key factor in the resource profile for the institution, the resource profile brought by the students includes their academic skills and their socioeconomic, racial, ethnic, and geographic diversity. It includes admission demand, selectivity of those admitted, and net tuition per FTE student.

[2] This and the following discussion of the Balanced Scorecard are taken from the web-based discussion found at quickmba retrieved June 23, 2013, at http://www.quickmba.com/accounting/mgmt/balanced-scorecard/ and Kaplan and Norton (1992, 2001).

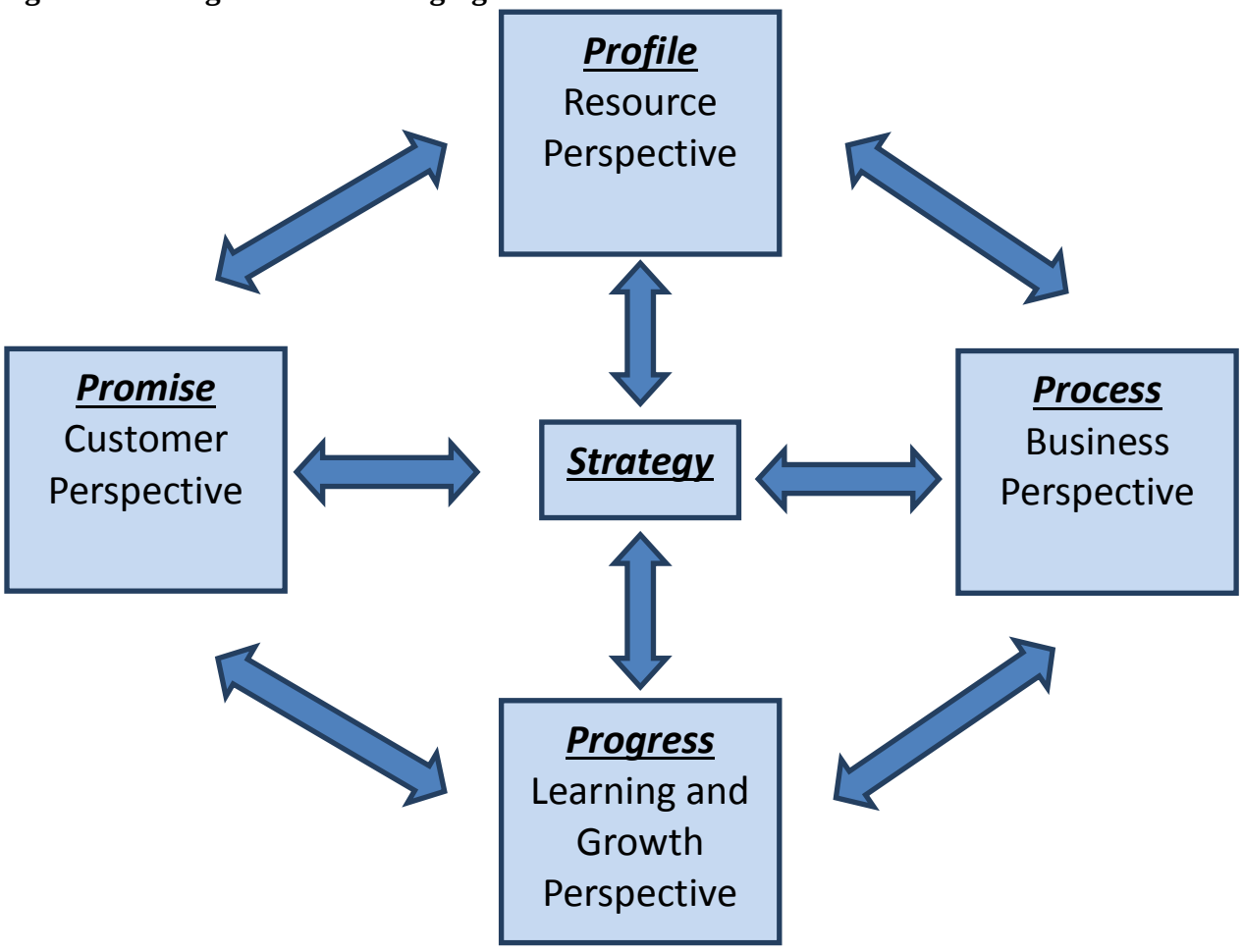
[3] The converse is also true, and institutions are not banks accumulating wealth and endowments for the ultimate "rainy day."

- Insofar as degree completion is the outcome of successfully meeting the academic requirements of a curriculum, academic *progress* is at the core of retention strategy. "A focus on progress turns attention more directly to the structures that impede degree completion, focusing, for example, more on high-risk courses and curricula rather than high-risk students" (Kalsbeek, 2013, p. 10). The quality of progress is important—is it leading students toward a degree in a straightforward manner? The comparable aspect in the corporate model is the Learning and Growth Perspective. This includes measures such as employee satisfaction and retention and programs designed to sustain growth in career progress. The corporate model does challenge the college to think beyond a narrow focus on grades and discipline knowledge. It includes factors that would be comparable to the cocurricular aspects of student learning: social and civic engagement, the development of personal skills, and the pursuit of lifelong learning. It also reminds us that part of the process is the growth and development of the faculty and staff at the institution. Also, this perspective reminds us that progress is an integrated cultural function of the entire community and extends beyond the classroom.
- Just as a rising tide lifts all boats, improving broad *processes* that affect the greatest number of students is the optimal institutional focus. "At both small and large institutions there are ample opportunities for process-related improvements, such as improving core enrollment processes related to advising, registration, billing, and financial aid as well as integrating business processes and student services to create a seamless experience for students" (Kalsbeek, 2013, p. 11). The comparable aspect in the corporate model is the Business Perspective. This part of the concept highlights the costs—benefits and time-quality aspects of the primary functions of the institution such as student affairs, academic affairs, admissions, financial aid, and student records. These processes represent the functions involved in the direct "value chain" for the student learning process that results in student success in degree progress and completion. They also involve functions supporting direct student interactions such as the library and learning system. Finally, they involve functions that provide a service to the college such as human resources and legal services.
- Focusing on those student outcomes that are integrally a part of the institution's core purposes and brand *promise* brings reciprocal benefits to the institution as much as to the students. Institutions need to consider their distinctive values and purposes, "focusing not only on generic student satisfaction and success but asking: 'We most value student satisfaction with what? or We most value success in doing what?'" (Kalsbeek, 2013, p. 12). For example, at DePaul our brand studies revealed that "urban, practical, and diverse" are tenets at the heart of our brand promise for students, and we need to deliver on this kind of learning and experience. The comparable aspect in the corporate model is the Customer

Perspective. This includes measures such as customer satisfaction, customer retention, and market share. A key focus is the quality of the degree and its value in the larger community. Quality includes increasing capability, competence, and value added in a timely manner. It is understood that considering the student to be the customer is somewhat problematic in many perspectives as it is preferable to see the student as a key stakeholder and more than simply one who purchases goods and services. The corporate world also has a broader view of the customer rather than simply the individual who purchases the product. Current thinking has the customer as a co-engaged, co-responsible individual making knowledgeable choices and gaining insights and information in making those choices.[4]

This adaptation of a Balanced Scorecard for enrollment management is shown in Figure 1.

Figure 1. Strategic view of managing enrollments: 4 Ps and the Balanced Scorecard



[4] The aspects of the 4Ps are explained in much more detail in Kalsbeek (2013).

This 4 Ps approach—with its focus on *profile*, *progress*, *process*, and *promise*—will be helpful in moving retention strategy from the periphery to the center of institutional attention, not by calling for an elevated importance or change in institutional "culture" but by more intentionally connecting rates of degree completion with other core purposes and institutional agenda. These other agenda include advising, course redesign, admission policies and outreach, financial aid, student services, and marketing (Kalsbeek & Cortes, 2013).

Developing a Strategy

The development and implementation of strategy still remains a central issue in managing enrollment for student success. Again, the Balanced Scorecard can give some guidance. Early enrollment theorists recognized that they needed to be responsive to student retention as intentionally as to student recruitment—and the subsequent reach into student affairs and academic arenas is evident. A comprehensive definition of enrollment management has evolved over the years. Hossler (2011, p. 20) presents this version:

> Enrollment management is both an organizational concept as well as a systematic set of activities designed to enable educational institutions to exert more influence over their student enrollments and total net tuition revenue derived from enrolled students. Organized by strategic planning and supported by institutional research, enrollment management activities concern student college choice, transition to college, student attrition and retention, and student outcomes. These processes are studied to guide institutional practices in the areas of new student recruitment and financial aid, student support services, curriculum development and other academic areas that affect enrollments, student persistence, and student outcomes from college. (Revised in 2001 from Hossler, Bean, & Associates, 1990)

The following looks at some of the strategic opportunities of those taking a leadership role in managing enrollment, both in the organizational concept and the systematic set of activities. Enrollment managers are frequently those institutional leaders who are ultimately responsible for meeting multiple metrics and achieving outcomes that may be imposed from external entities, or prioritized by boards or internal stakeholders who may not see the whole picture. It is often said that an enrollment manager is only as good as their last fall's entering class, and yet the range of competing interests that must be balanced are significant and challenging. Enrollment managers are charged with managing revenue, prestige, access, diversity, and completion (Hossler, 2012)—a plate full of contradictions, especially when coupling these institutional goals with the public interest. It is imperative that enrollment leaders articulate the costs and benefits associated with prioritizing some of these goals over others.

There are also broad societal goals that institutions seek to pursue, like enrolling students from the home state or enrolling students who reflect the population diversity in the region; and there are institution-specific goals like serving first-generation students, or attracting more

National Merit Scholars. These parameters are often articulated in the institutional mission and form boundaries for enrollment decisions. Faculty members hope to see students in their classes who are brighter, better-prepared, and committed to learning as their programs enhance scholarship and value learning. Financial and budget staff may hope to see students who are wealthier and need fewer institutional dollars. It becomes clear that different goals can be in conflict, and the enrollment leader needs to help the institution reconcile multiple aspirations at once. Market and mission collide when the students graduating from American high schools come increasingly from low-income households and low-performing schools. Access and attainment are in tension as more students have access to postsecondary studies, but completion rates are static or falling due to factors such as inadequate curricular alignment between high school and college, and students' financial uncertainties from year to year. Serving local communities' students and attracting students from far-away states are in tension when the latter students contribute more to net tuition revenue and the former are thought to contribute to the future tax base. The crux of enrollment management is finding creative ways to work within tensions and tradeoffs that are very real when serving both mission and market.

Implementing an Institutional Strategy

There is much more to strategically managing enrollments than meets the eye, and the inherent enrollment strategies and skills of managers can and should lead the way toward institutional success. Enrollment managers are called to leverage their existing skills and practices to foster university-wide comprehension, communication, commitment, and collaboration aimed at strategic institutional success.

Comprehension

The first step in using the Balance Scorecard as a guiding methodology to implement strategy at all levels of the organization is to clarify the understanding of the strategy and develop a coherent consensus. This involves having a conceptual model of student progress, the college processes, and the interactions of the progress and processes. This comprehension should involve the institutional mission and its strategic plan. Furthermore, it involves translating these understandings into objectives that clarify the strategy of the institution. Sometimes these metrics are referred to as Key Performance Indicators.

Management teams need to have a shared vision, a shared conceptual model, and a shared vocabulary. Those who manage enrollment have to understand the market context in which the institution is positioned, especially for the vast number of colleges and universities that are in the "middle market" where competition for students is fierce and the need for differentiation is critical. The institutional brand promise is derived from the institutional mission and should be realistically aligned with market position. The brand promise, such as "urban, practical, and diverse," represents the distinctive type of educational experience students can expect, and seeks

to fulfill the historic mission of the institution. Enrollment leaders are responsible for helping institutional stakeholders to clearly articulate what the mission is in their particular setting, how that mission might be actualized in the market context, and what resources or tradeoffs are in play when the mission is fully pursued.

At a foundational level, managers should be educators who inform and clarify strategies and options for university stakeholders. We might refer to this educational role as "framing the informed view." This does not imply that options are presented in a completely neutral manner, but that the enrollment leader appropriately advocates and elevates some goals over others. "It is in the process of helping senior campus administrators and boards of trustees to define, prioritize, and balance these institutional goals that we locate the heart and soul of enrollment management" (Hossler & Kalsbeek, 2013).

Framing is an apt way of describing how enrollment leaders create institutional success. Because enrollment managers are accustomed to volumes of data and analytics, they often create shorthand ways of understanding data; dashboards, benchmarking, trend analysis, and creative data visualizations are common ways that practitioners reduce complexity. Providing a conceptual model, sometimes based in research literature, is another way that institutions can gain traction toward goals. As Peter Senge (1990) reminds us, many of the most bedeviling problems organizations face are the result of the prevailing mental models used to define and understand challenges in the first place. For example, how student retention is framed and the language used to do so shape how the problem is defined, how solutions are envisioned, and how the institution responds; if those responses prove to be inadequate, perhaps it is the way the challenge was framed in the first place that is in part at fault (Kalsbeek, 2013). The 4 Ps model presented in Figure 1 was developed to help us grasp the complexities of what it means to enhance student success, and to create and reinforce a shared understanding of the varied factors at play.

Communication

The next steps in developing a management system are to articulate the strategic objectives, to translate these strategic objectives into operational objectives, and to communicate these operational objectives effectively throughout the institution. Part of this will involve cascading the objectives into various key activities. For example, view the process of students' progress to degree. If the institution's goal is to graduate a proportion of the entering students, this is best translated into objectives for the first-year programs. These objectives interact with the objectives for the disciplines. Objectives for financial aid interact with objectives for residence halls. Objectives for mathematics interact with objectives for engineering.

Colleges and universities are complex organizations, comprised of faculty, staff, and students who are highly invested in their roles at the institution. Yet, when these actors are compartmentalized and unaware of what is happening in the department or unit across campus or down the hall, the organization as a whole becomes fractured. "Senge (2006) observed that

successful modern organizations require open systems and high levels of communication among units throughout the organization. To effectively influence student enrollments, enrollment managers and their unit members must recognize their interdependence and frequently share information, goals, and strategies" (Hossler, 2011, p. 27). This is particularly important when managers must gather support on behalf of a strategy or initiative, because constituents must understand both the situation and what is required of them. Enrollment managers are well-situated to connect ideas and data across units, and to articulate the critical task of managing enrollments on behalf of institutional sustainability.

Commitment

The next step in implementing strategies derived from Profile, Progress, Process, and Promise is commitment—a planning process that sets targets and aligns strategic initiatives. This involves the comprehension and coordination from the earlier two steps. It requires coordinated and achievable goals, objectives, and targets of various offices because students are engaged in activities provided by multiple institutional functions.[5] It also involves the college functions aligning their strategies in support of the overall outcome of student progress toward a degree and successful completion.

Discussing realistic goals and targets for institutional success is an appropriate and worthwhile endeavor for institutional stakeholders. Armed with a conceptual model and baseline data, how do leaders managing enrollment move the needle toward institutional success? First, as discussed, the leader must help the institution know itself—where does the institution sit in the market landscape, where might it aspire to go, and where are the boundaries imposed by the profile of the institution and of its students? Institutions serving large numbers of students coming from low-income or first-generation households have different constraints than institutions with very low admission rates that serve highly prepared and wealthier students.

> Retention and graduation rates, like any other enrollment management goal, are broad enrollment measures to be assessed and addressed as institutional attributes and outcomes. . . . A university may struggle to achieve its overarching degree completion goals because it will underestimate how tightly connected retention is with other institutional attributes and enrollment dynamics. (Kalsbeek, 2013)

Once the institutional stakeholders better understand the interplay of factors related to student persistence and completion, realistic goals and targets for institutional success can be set. These goals should be "ratified" in some formal way, so that university leadership articulate and promote the importance of improving degree completion. Including this goal in a strategic plan or an initiative sponsored by the provost or president can be immensely helpful.

[5] An example of institutions realizing and responding to this need for organizational integration and commitment has been the advent of the "one-stop shop" for student services where students can go to one physical location for registration, housing, fees, financial aid, and often parking and library fines.

How committed might the institution be to achieving its goals and targets? Hossler, for example, suggest that admissions officers be evaluated on the basis of how many matriculants persist rather than on the number of students they recruit (Hossler, 2011, p. 38). Several institutions have elevated their advisors to the status of "life mentors" who are expected to be intrusive in helping students at higher risk succeed, and are evaluated on their students' retention and outcomes (Mercy College, 2012).

Goals and metrics should not arise in a vacuum of information and data; nor should strategies be adopted that are not tied to direct and opportunity costs. Enrollment leaders can frame considerations for tough decisions about the distribution of scarce resources among competing needs. Enrollment management is centered on creating a learning organization (Senge, 1990). In the world of enrollments, nothing is static; there is very little "business as usual." In contrast, many actors in a university setting may have fairly predictable routines and ways of doing business, teaching, or researching; only in recent years are university professionals and faculty being pushed into new realms by changing demographics, faltering economics, and disruptive technologies. Enrollment management as an organizational structure can help the institution on the whole understand and adapt to rapidly changing contexts; a close connection with institutional research and analysis is critical to the work that must be done.

Collaboration

The final step that is to be considered in a strategic management system is building bridges and breaking down silos, to involve more university stakeholders in the enrollment lifecycle. In the mid 1980s when work in admission and financial aid became more complex and students came from increasingly diverse backgrounds, enrollment divisions started to incorporate offices such as university marketing, the registrar, student records, orientation, advising, and even career services into their varying campus structures. "Because enrollment management involves many organizational units on campus it requires high degrees of collaboration and *interdependence*" (Hossler, 2011, p. 28). Enrollment came to be seen not just as a point of entry, but as the entire student life cycle that has to be intentionally developed, supported, and sustained.

> At its most advanced it has a hand in every interaction between a student and a school, from the crafting of a school's image all the way through to the student's successful graduation. Any aspect of university life that bears on a school's place in the collegiate pecking order is fair game: academic advising, student services, even the curriculum itself. (Quick, 2005)

There are strong ethical reasons to only recruit and enroll students who have a good chance of persisting and graduating,[6] but there are also short-term revenue consequences when students leave the institution prior to completing their degree, and longer-term branding and reputational

[6] Unfortunately, while estimating an institutional graduation rate can be done fairly well, predicting these outcomes for an individual student is less precise than many might imagine.

implications when students tell others of their good or bad experience. Colleges know what margin they need to have for their bottom line in order to create a sustainable institution. As mentioned earlier, being "nonprofit" is not the same as being insensitive to "cost-revenue." Bringing the appropriate number and mix of students in the door is a necessary, but not sufficient, measure of institutional success. It should be noted that this number and mix of students must be consistent with the resources the institution has available to meet the needs of various groups of students.

"The reality is that the factors that influence student enrollment outcomes are too complex for any one administrative unit to actually control and manage" (Hossler & Kalsbeek, 2013). Enrollment managers do not operate in a silo; by necessity their work is cross-cutting with academic deans, student affairs personnel, student support staff, financial advisors, and so on. Modeling these ongoing partnerships is critically important when encouraging stakeholders to work collaboratively toward institutional success. Individual faculty or staff members may not naturally see themselves as part of the effort to improve retention and degree completion. Partnerships must be built across the institution where information is shared and parties listen to what is revealed with data and analytics, as well as to what is going on in real time with students. In the table found in the chapter appendix, there are some examples of possible partnerships that an institution might find valuable as it translates its business process perspective into targets and strategic initiatives. These partnerships will become most evident at the institutional level as strategies are clarified by identifying which functions will be involved in accomplishing the objectives that are pursued.

Building a Supporting Portfolio of Research

In support of the framework described above, we can develop a research portfolio that ranges from the most basic, yet essential, tracking reports to a more integrated model where a supportive analytical institutional culture is formed by traditional institutional research, enrollment management research, and other institutional assessment and analytic research functions. The following will describe some of the products that an institution might find useful in managing the success of its enrollment and in taking steps in implementing strategies derived from the 4 Ps—building comprehension about the market context, university profile, and degree completion trends in collaboration with university stakeholders.

Annual Baseline Retention Knowledge

As Cheslock and Kroc note, the researcher must begin with solid descriptive data that can be sliced and diced in many ways (Cheslock & Kroc, 2012). Here, the role of research and analysis is to create a culture of evidence and to frame and inform the university conversation. Important components of this baseline knowledge include:

- *Annual tracking report*: It is important for an institution to track cohort-based retention and graduation rates and to provide annual updates by a variety of student demographic, academic, and financial characteristics. Along with the percent continuing and graduating by incoming academic quality or remaining financial need, for example, this tracking mechanism is augmented by more complete student information provided by the National Student Clearinghouse on eventual degree completion at other institutions, information on both new freshmen and new transfer students, and peer comparison information available through either IPEDS or CSRDE.
- *Profile of new degree recipients*: A companion piece to the cohort-based tracking report is a profile of successful degree earners, with contextual information at the peer or national level. This report highlights time-to-degree trends for various student populations and creates a profile of the successful student. Through this analysis, the institution can identify what proportion of graduates take courses during the summer or online, or course-taking patterns in math or other gateway courses. The institution can also benchmark its degrees awarded against state and national trends.
- *Annual tracking of retention and graduation of special populations as part of program assessments*: The third piece of the baseline reporting function is the information that feeds back to program directors about the progress made by their participants. This effort also serves to build collaboration between researchers and programs that have degree completion as a success measure and assessment and program evaluation efforts at the institution.
- *Retention database*: In order to facilitate this reporting, it is best practice to build a database or to make the appropriate modifications in an existing database to support these analyses. This will be discussed in more detail later.

Analyzing Models and Predictors of Success

Multivariate analyses can unpack the trend data by institutional and student characteristics that are related to the institution's mission and market position. These analyses call for a more advanced statistical skill set and greater systems thinking. By including important elements of the student experience related to cocurricular experiences, student engagement, on-campus residence life, and student employment indicators, the researcher builds collaboration across a broader stakeholder base and with it a shared understanding and commitment to resulting strategic initiatives.

While researchers often include a virtual variable cacophony in modeling predictors of retention and graduation rates, the most impactful efforts focus on identifying an array of variables that the institution can affect. For example, our modeling identified that first-year grade

point average and earned credit hours combined was a stronger predictor than either variable was independently. This first-year academic progress dimension became a focal point for the university, as a success metric for both university programming efforts and in advising students.

While much is known about the retention and graduation predictors of new full-time first-time freshmen, less is known at the national level about students who transfer into our institutions. For institutions with large transfer populations, these tracking and modeling efforts are equally as important.

Assessing the Academic and Cocurricular Experience

In addition to specific retention research, other components of the traditional research and analysis portfolio are critical to building comprehension around how students make progress toward a degree and how the institution delivers on its brand promise. These components include:

- assessment of the classroom experience, practices and of learning outcomes, working closely with research partners in both academic affairs and the cocurricular area of student affairs;
- analyses of academic progress and pathways to degree completion, and performance in placement processes and gateway courses; and
- pulse-taking of students on issues related to campus climate and engagement, which while typically are in service of understanding the degree to which students are engaging in high-impact educational opportunities, can also be used to consider how these are consistent with brand and mission.[7]

Applying a market focus. The researcher can augment this more traditional research and analysis portfolio with enrollment management and market research to understand how enrollment profile is shaped. These research projects can include the following:

- Market and brand research: This includes gathering information about what potential students (and parents) desire from a college experience, including information about employment trends, and which can inform new program development. In addition, researchers gather information about what target markets think of an institution and other institutions. Along with more traditional methods for gathering these data, researchers can track social media activity and examine web analytics to understand how and why individuals discuss an institution and what concepts are associated with that institution.

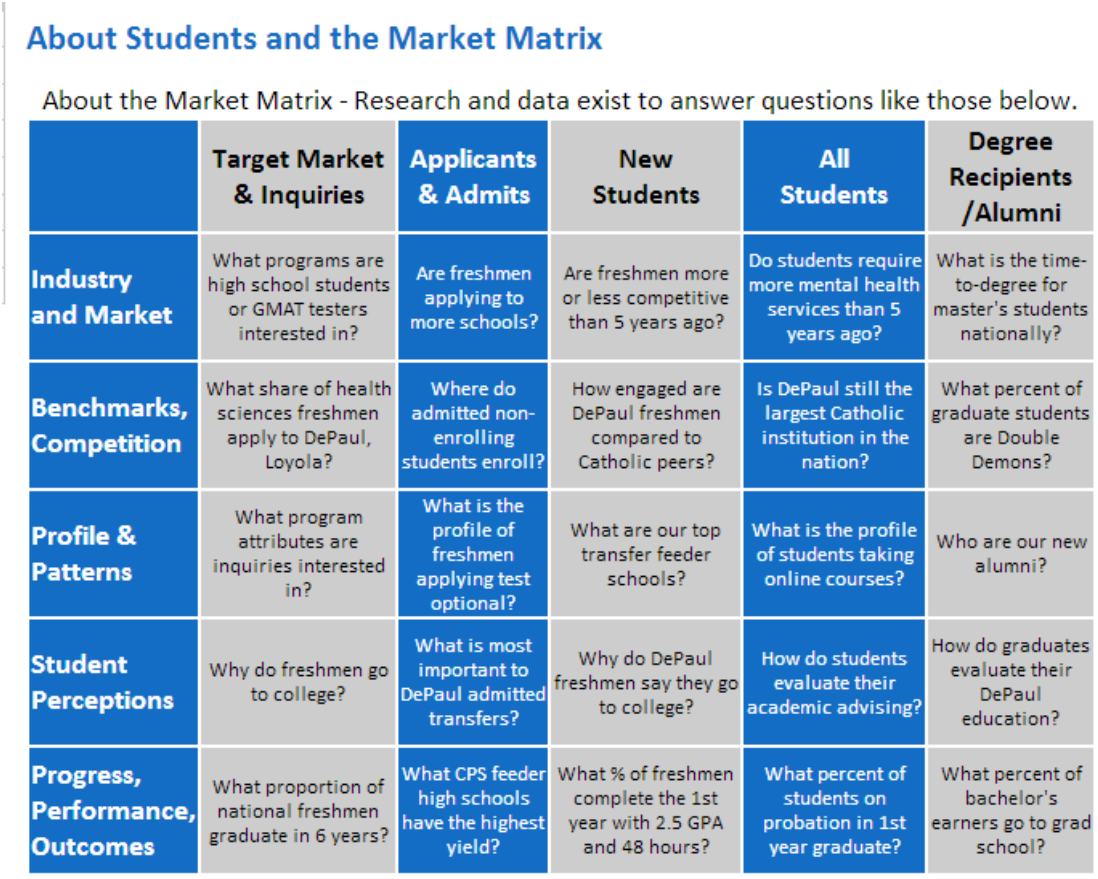
[7] An extended discussion of assessment is beyond the scope of this chapter. Many of the chapters in the *Sourcebook* provide additional detail. There are also numerous organizations focused on the topic such as the American Association of Colleges and Universities and the National Institute for Learning Outcomes Assessment and the research done by the American Association of Community Colleges.

- Benchmarking: This involves identifying what other institutions, particularly competitors, are doing to enhance their desirability among various markets and understanding one's relative position among these institutions on various student, institutional, and market attributes.
- Admission profile research, understanding the changing profile/enrollment mix: This includes understanding the demographic, geographic, and socioeconomic characteristics of a student profile in various segments and how this profile has changed over time, putting this profile in the context of regional and national trends, and understanding the implications for enrollment planning.
- Analysis of financial aid packaging and tuition pricing: This involves examining enrollment, financial aid, pricing, and revenue tradeoffs in light of the institution's objectives for retention and graduation rates and the mission to serve certain types of students.

Framing the knowledge base. As a conceptual framework like the 4 Ps will help move retention strategy to the center of institutional attention by more intentionally connecting degree completion with other core purposes (Kalsbeek, 2013), a conceptual framework for the research described above provides a cohesive structure, which makes the information more accessible and usable, building comprehension. For example, consider the institutional research website and how quickly the richness of the university's information resources can become a laundry list of alphabetized titles. How can the information be structured so that the user can both locate what she knows to exist and, perhaps more difficult, what she needs but doesn't know exists?

One example of a conceptual framework is the DePaul Market Matrix shown in Figure 2. This matrix combines the research and reporting about students into a two-dimensional grid in which the intersection of these dimensions is a business question. Across the X axis is the student flow, from target market and inquiry to alumni. Down the Y axis is the market perspective from external to internal, from market and benchmarks to performance. At the intersection of the row and column sits a typical business question that is a hyperlink to a list of appropriate resources. Hence, this matrix helps users find what they know is available and also what they need but didn't know existed. This matrix also reinforces thinking about the management of enrollments as a part of a systematic flow within a conceptual model.

Figure 2. DePaul Market Matrix



About Students and the Market Matrix

About the Market Matrix - Research and data exist to answer questions like those below.

	Target Market & Inquiries	Applicants & Admits	New Students	All Students	Degree Recipients /Alumni
Industry and Market	What programs are high school students or GMAT testers interested in?	Are freshmen applying to more schools?	Are freshmen more or less competitive than 5 years ago?	Do students require more mental health services than 5 years ago?	What is the time-to-degree for master's students nationally?
Benchmarks, Competition	What share of health sciences freshmen apply to DePaul, Loyola?	Where do admitted non-enrolling students enroll?	How engaged are DePaul freshmen compared to Catholic peers?	Is DePaul still the largest Catholic institution in the nation?	What percent of graduate students are Double Demons?
Profile & Patterns	What program attributes are inquiries interested in?	What is the profile of freshmen applying test optional?	What are our top transfer feeder schools?	What is the profile of students taking online courses?	Who are our new alumni?
Student Perceptions	Why do freshmen go to college?	What is most important to DePaul admitted transfers?	Why do DePaul freshmen say they go to college?	How do students evaluate their academic advising?	How do graduates evaluate their DePaul education?
Progress, Performance, Outcomes	What proportion of national freshmen graduate in 6 years?	What CPS feeder high schools have the highest yield?	What % of freshmen complete the 1st year with 2.5 GPA and 48 hours?	What percent of students on probation in 1st year graduate?	What percent of bachelor's earners go to grad school?

Practical Considerations in Building a Successful Research Agenda

In the final analysis, research and analysis must help the institution understand itself more fully, creating a culture of evidence and proactively connecting decision-makers to insights in order to frame the informed view.[8] What knowledge, skills, and competencies will best position the researcher to meet this challenge?

- *Develop mastery in research techniques and methodology*: Develop and nurture a deep and broad research knowledge base and skill set through professional development and lifelong learning, participation in relevant listservs, national and regional professional organizations, and data sharing and benchmarking efforts (i.e., IPEDS, Navigator, CSRDE).[9] This knowledge base should include content

[8] DePaul University's Institutional Research & Market Analytics (IRMA) office vision statement was crafted to embrace this approach: "We will frame and inform the institutional strategic dialogue, building a culture of evidence in support of planning and management, as agents of change at DePaul and in higher education generally."

[9] CSRDE is an example of a benchmarking service that has a series of benchmarking reports. This service has the basic analytics to select institutions and then produce reports on demand with the higher cost membership. Reports are described at http://csrde.ou.edu/web/reports.html. These reports have a more detailed set of ethnic categories than IPEDS and include data from the student profile. They can be produced from the same basic data set as the

areas of institutional research, market research, statistics and forecasting, higher education policy, strategic management, change management, and organizational development. Understand the array of data available publicly and keep abreast of emerging research tools and techniques including data mining, data visualization, and techniques for Big Data analytics.

- *Contextualize information in an institutional and national frame*: Mastering the technical and analytical skills needed to conduct high quality research is fundamental and foundational (Terenzini, 2013). But without an understanding of the issues that face the institution and an awareness of the institution's local, regional, and international environments, the researcher provides data, not insights. Learn continuously about institutional objectives, how the institution functions and how decisions are made. Understand key issues facing higher education in general and the landscape of policy and regulation in order to frame institutional knowledge appropriately. This is part of what Argyris (1977) calls "double loop learning" in which there is learning about decision-making.
- *Shift the paradigm*: Transition from a "service" paradigm to a "partnership" paradigm. This requires more than the traditional institutional research skill set; make sure the right people are on the bus in the right seats (Collins, 2001). The researcher must move beyond order-taker to activist (Voorhees & Hinds, 2012), helping university partners understand what information is available and in what context.
- *Anticipate needs and actively scan the environment*: Regularly scan the environment to follow local, state, and national trends that impact the institution and provide context for understanding institutional trends. Participate in higher education policy listservs, actively scan peer institution websites and program offerings, and follow emerging trends, for example, in the Bureau of Labor Statistics (BLS).
- *Systematically identify key questions*: Participate in on-campus dialogue to proactively identify and prioritize research questions. The conceptual framework discussed above not only benefits the university community by organizing information in a way that makes sense to the user; it also benefits the researcher because it begins to outline the questions worth answering. Identify other means to determine the important research questions such as participating in the university's strategic planning, sitting on key university committees, and active listening with university stakeholders.
- *Leverage resources*: Effectively leverage various institutional resources, including data, technology, and human resources, against ever-shifting priorities. For

IPEDS Graduation Rate Survey under the Higher Education Opportunity Act (HEOA). They also include data on retention and graduation for the core set of transfers from two-year institutions.

instance, institutions are required to report data to various agencies such as the National Center for Educational Statistics (NCES) through the Institutional Postsecondary Education Data System (IPEDS) and the Higher Education Opportunity Act (HEOA). The core student data for these requirements will need to be available in the institution's databases. In addition, there are other requirements and reporting obligations such as the Common Data Set that require student data. A good practice is to create a reporting extract for each of these reports. An even better practice is to create a core database that has attributes in it denoting inclusion in these various reports which can be readily merged with other data for subsequent analysis that expand the line of inquiry. In fact, if these subsequent analyses will include students with characteristics similar to those in the federally reported data that are available through public domain, a best practice is to use the same data source and match the data segments. These core databases are also practical in that data that are extracted from them can be replicated and the coding to create these databases creates a foundation of documentation, both important features during an audit process.

- *Communicate insights*: Develop skills to effectively communicate quantitative information in effective narratives, presentations, and data visualizations (Sanders & Filkins, 2010). Develop a multipronged communication strategy to connect findings to those who shape the university dialogue about degree completion. For example, take a large research report (written), present a distilled version of this report (presentation) at a monthly research presentation, meet with a department to present this distilled version for a focused conversation (presentation), and break this distillation down to a series of one-page research briefs (written), effectively recirculating insights so that they may percolate through the institution and connect with a wider audience with various learning styles.
- *Coordinate learning opportunities*: Actively build research partnerships across the institution to effectively link information to how it can be used and buttress innovative thinking (Voorhees, 2012. In this shifted paradigm, where service has evolved into partnership, the researcher is more vested in developing a proactive communication strategy and coordinating opportunities for university learning. By creating this strategic feedback loop, the researcher nurtures commitment to shared initiatives and allows information about business processes and information use to flow back to the researcher. Some examples are:
    - A committee bringing researchers together around large-scale student surveys helps identify the surveys that are administered across the university and gathers university knowledge from individual research projects.
    - A regular gathering of university data users and data custodians creates a platform for coordinated, ongoing data management and supports the flow of

information around data processes, integrity, and consistency (McLaughlin & Howard, 2004).

- A monthly program of research presentations from across the institution brings cohesiveness to a distributed research function and provides a continuous learning opportunity for staff and faculty. One example that focuses on applying data to preconceived ideas about the university, akin to myth busting, provides interesting and unknown facts and helps build a culture of evidence.
- A committee on retention and degree completion brings together professionals in student affairs, academic and career advising, and key areas of enrollment management, financial aid, admissions, and student records. It is a natural focus point for strategic planning for student success, for accreditation, and for developing joint initiatives across several functional areas.

Closing Comments

Colleges and universities share certain characteristics with other organizations. We have inputs. We have business processes. We have outcomes and outputs from those processes. We serve individuals who pay for our goods and services. Many of these other organizations have found the Balanced Scorecard to be a helpful strategic approach. In this chapter, we have discussed the parallels between the Balanced Scorecard and the 4 Ps framework for the strategic management of enrollment that supports the progress of students to and through program completion. We have shared some of our ideas about institutional and student profiles, student progress, educational processes, and institutional brand promise, and our practices for implementing the resulting strategies through comprehension, communication, commitment, and collaboration. We have asserted that enrollment leaders are well-positioned to lead these strategies in a collaborative fashion. We have outlined a research agenda to support these activities.

Within our institutions, great uniqueness abounds. The first thing you will hear when you go to any American institution of higher education is that "We are different." That is true; there are more than 7,000 different institutions that are part of the higher education process in our country and their strength is that every one is unique. There are no two identical institutions. There are different definitions of "success." At the same time there are commonalities; we all enroll individuals and we have some type of certification of individual capabilities. Most of us call those individuals "students" and the certifications are called "degrees" and the certification process is called "graduation." As you read through other chapters in this volume, you will find that the work done in looking at progress toward degree completion is quite extensive. You will also find that the work is best done by colleagues connecting within and across institutions in intentional and evidence-based ways.

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A 4 Ps of Student Retention Framework Planning Matrix – Example from DePaul University

	Profile	Progress	Process	Promise
Purpose	Elevate the academic profile of entering student classes while keeping a mission-balanced financial and demographic mix.	Ensure students' initial academic success and continuous academic progress toward a DePaul degree.	Improve and integrate all processes and services related to students' enrollment at DePaul.	Ensure all students' expectations and experiences are consistent with the promise of DePaul's mission and brand.
Partners	Admissions staff, Institutional and Market Researchers, Transfer advisors, Outreach staff, Financial Aid	Faculty, Deans/Department Chairs, Advisors, Student Records, Information Services, Academic support services	Financial Aid, Student Accounts, Student Records/Registrar, Advisors, Orientation Staff, Residence staff, Information Services	Marketing, First-year experience staff, Faculty, Deans/Department Chairs, Student Affairs/student support staff, Career advising staff, Experiential Learning staff (study abroad, service-learning), Internship staff
Practices/ Policies	Create new curricula to strengthen demand and profile Reduce weight of standardized test scores in selection Pilot test-optional admission Use non-cognitive variables in admission Encourage rigorous high school curricula (i.e., IB programs and dual enrollment) Work with high schools to better align high school curricula and learning outcomes with college expectations Create clear and timely transfer pathways (DAPP)	Investigate effective pedagogies for redesign of gateway courses with high DFW rates Increase expectations for faculty to provide early feedback and grades Actively seek to intervene with students who appear to be headed toward academic probation Emphasize and quantify the importance of first-year academic performance in orientation and advising Facilitate and encourage use of online degree audit systems and Degree Progress Reports Articulate and publish clear degree pathways leading to timely completion Provide bridge or summer programs to enhance academic preparation	Physically integrate tutoring resources and academic support services that were previously separated Offer specialized advising for undeclared students or those in the process of changing majors Integrate Student Records, Financial Aid and Student Accounts to provide one-stop enrollment service and to ensure cross-training of staff Assist students in managing their personal resources and increasing financial literacy Ensure that courses and classrooms are available at the right time to meet student demand Require transfer students to engage in orientation (in-person or online)	Require freshmen and transfers with fewer than 30 credits to take a FYE Chicago Quarter course Require that students complete a Junior year experiential learning requirement (e.g., internship, study abroad, service-learning or research) Ensure all students are accessing high-impact educational practices at comparable rates Launch e-portfolios in all first-year writing courses to engage students in reflecting on their learning outcomes Encourage faculty to increase academic rigor and quality instruction through faculty development programs (e.g., DePaul Online Teaching Series) Offer programs for students of color to ensure all students engage in academic and multicultural opportunities Offer learning communities to strengthen learning across contexts

Part 1

Supporting Student Retention and Graduation through Building Effective Programs

This first part of the *Sourcebook* looks at the aspects of the student experiences that reflect and define the context of the students' success in the broader definition of society. A large part of these aspects have traditionally been thought of as cocurricular learning. The goals of most institutions recognize the need to develop the full range—both curricular and cocurricular—of the student's abilities. The successful student is engaged in the broader aspects of society and successfully contributes to the society of which he or she is part. Programs to improve student retention and graduation need to engage the breadth of the college learning experience.

This part of the *Sourcebook* also looks at parts of our college processes and interventions that supplement the traditional classroom learning pertaining to critical thinking skills, academic knowledge, and discipline-based career skills. We need to know how to evaluate and measure success in nontraditional ways. We need to put systems in place to help improve what we do and how we do it. This includes the use of virtual classrooms of the future as well as the more traditional processes on our campuses. These focused interventions and feedback systems support and enhance our processes and increase the success of our students.

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Student Engagement in Service and Community-Based Student Learning

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The purpose of this chapter is to provide higher education professionals with a resource to better understand service and community-based learning in higher education and how it relates to student success. In order to accomplish this task, we have broken the chapter into four distinct areas of emphasis. The first area of emphasis introduces the topic of community engagement and attempts to describe and define the concept of service and community-based student learning on higher education campuses. The second area of emphasis provides a historical perspective of service and community-based student learning beginning in the 1600s. This historical perspective is followed with a description of recent trends, as well as a discussion focusing on currently accepted principles of service and community-based student learning. A third area of emphasis provides a summary of student benefits associated with community-based learning experiences. In addition, examples of applications of these learning experiences in the literature are provided in order to highlight some best practices. The fourth area of emphasis is on key organizations and measures that may prove useful to individuals attempting to better understand this area of student learning within their organization. Rather than an end point, this chapter should serve as a starting point for higher education research professionals interested in this expanding topic.

The Engaged Campus

The current era of higher education accountability has led many colleges and universities to consider their role in educating undergraduate students to become responsible citizens who actively engage in their community (Jacoby and Associates, 2009). This heightened focus on producing socially responsible citizens requires institutions to identify what it means to be an engaged campus and to provide a framework for involving students in service and community-based learning. As a result, institutions across the country are increasingly incorporating public and civic education into their strategic plans. According to the American Association of State Colleges and Universities (2013), “A recent survey of AAC&U members confirms that many institutions are placing more emphasis on civic education by developing innovative educational

practices that advance learning outcomes essential for responsible citizenship, at home and abroad." For some institutions, the drive to become more publically engaged in their community stems from a desire to demonstrate that public funds received by the institution yield tangible rewards to both the community and state. For other institutions, increased engagement activities provide a mechanism by which to distinguish the institution from its peers in an increasingly competitive academic marketplace. For yet other institutions, public engagement reflects a way to recommit attention and resources to important aspects of the institution's historical mission.

Regardless of the motivation, institutional commitment to public and civic education is increasing. For example, Campus Compact, an organization "committed to fulfilling the civic purposes of higher education" (Campus Compact, 2013b), reported a membership of more than 1,100 colleges and universities in 2013 with an annual increase averaging 70 institutions per year over the past five years (Campus Compact, 2013a). Additionally, since the inception of the Carnegie Foundation's Community Engagement Elective Classification in 2006, more than 300 institutions of higher education have met the standards for inclusion (Carnegie Foundation, 2013a). This voluntary institutional classification attempts to describe the "collaboration between institutions of higher education and their larger communities (local, regional/state, national, global) for the mutually beneficial exchange of knowledge and resources in a context of partnership and reciprocity" (Carnegie Foundation, 2013b). This evolving classification requires institutions to collect and document measurable outcomes that demonstrate the institution has effectively incorporated community engagement into its mission and identity.

Perhaps not surprisingly, student and faculty commitment to public engagement has increased during this period. Each year, Campus Compact administers a survey to its member institutions in an attempt to quantify community engagement. For example, during the 2011-12 academic year, survey results indicate that the 557 members responding to the survey contributed $9.7 billion in service to their communities (Campus Compact, 2012) compared to $5.7 billion reported for 2007-08. In addition, results of the same study indicate faculty, student, and alumni support through both curricular and financial resources has increased. Further, results from the National Survey of Student Engagement have suggested that as many as "two fifths (43 percent) of college seniors report doing community work or service learning as part of a class assignment (National Survey of Student Engagement, 2012), indicating that many schools are incorporating this powerful pedagogical approach into their programs" (Kuh, 2003, p. 28).

Because public engagement efforts are multifaceted, and cover a wide range of activities, an institution's public engagement work are likely to intersect with other institutional effectiveness activities and also play into student outcomes. Specifically, Bringle and Hatcher (2000) suggest that institutional commitment to public engagement could include such activities as "clarifying mission in a manner that produces increased congruence between mission and practice, examining how the curriculum can better reflect community engagement, investing in infrastructure that supports community engagement, developing new models for assessing successful engagement in the community, and adjusting the roles and rewards of faculty so that their work in the community is recognized and supported" (Bringle & Hatcher, 2000, p. 274).

Given the emphasis on public engagement, it is important that research, analysis, and assessment professionals along with other administrators in colleges and universities become familiar with the topic.

Defining Service and Community-Based Student Learning

Defining service and community-based student learning is a daunting task. While community-based learning is not new, practitioners and scholars use a variety of different terms to refer to approaches that are similar in application. As a result, the concept remains confusing to many observers (Mooney & Edwards, 2001). Indeed, one observer suggested that there are nearly 150 different terms to describe service and community-based learning activities (Mooney & Edwards, 2001). Rather than attempt to develop a structured definition, this section will describe several terms professionals working with student success are likely to encounter as they search the literature and work with campus and community constituents. Additionally, student-success professionals should know in advance that these terms are often used interchangeably even within a campus (Bringle, Hatcher, & Holland, 2007). For example, one academic department may use the term "service learning" to describe a project while another may describe the project as "community-based learning." The key point is to remain flexible and to work toward an understanding of the process and desired outcomes rather than becoming bogged down in the minutiae of the definition.[1] Nevertheless, we share some of the widely recognized definitions here in order for the reader to explore this topic further.

Community-based learning (CBL): Georgetown University (2010) defines community-based learning as "an academic course-based pedagogy that involves student work with disadvantaged and underserved individuals or groups (or organizations working with and for disadvantaged and underserved individuals or groups) that is structured to meet community defined needs. Critically, course objectives and student community work are fundamentally integrated." A conflicting definition is held by Brown University, as Brown states that "community based learning has moved firmly beyond the marginalized, co-curricular model of altruism to a sophisticated and integrated pedagogy of learning" (Brown University, 2009). Although Georgetown and Brown may agree on the locational focus of the activity associated with CBL, the philosophy with regard to whom the campus engages is dramatically different between the two interpretations. Of course, key constituents on your campus may have their own definitions, as well.

Service learning: Service learning, probably the most recognized form of community-based student learning, is commonly understood to be a "course-based, credit-bearing educational experience in which students (a) participate in an organized service activity that meets identified community needs and (b) reflect on service activity in such a way as to gain further understanding of course content, a broader appreciation of the discipline, and an

[1] For an expanded glossary of terms associated with civic engagement, we recommend "Conceptualizing Civic Engagement: Orchestrating Change at a Metropolitan University," by Bringle, Hatcher, and Holland (2007).

enhanced sense of civic responsibility" (Bringle & Hatcher, 1995). The Learn and Serve America's National Service-Learning Clearinghouse defines service learning as "a teaching and learning strategy that integrates meaningful community service with instruction and reflection to enrich the learning experience, teach civic responsibility, and strengthen communities" (Learn and Serve America, 2010). Further, Campus Compact (2013a) describes service learning as "incorporating community work into the curriculum, giving students real-world learning experiences that enhance their academic learning while providing a tangible benefit to the community."

Civic engagement: Barbara Jacoby and Associates (2009) dedicates a full chapter in *Civic Engagement in Higher Education: Concepts and Practices* to the definition of civic engagement. As a sign of what is to come, the author states early on that "there are probably as many definitions of civic engagement as there are scholars and practitioners who are concerned with it" (2009, p. 5). For the purpose of this chapter, we share Jacoby's solution by adopting the definition developed by the Coalition for Civic Engagement and Leadership (CCEL) at the University of Maryland. Jacoby writes that "civic engagement is defined as acting upon a heightened sense of responsibility to one's communities. This includes a wide range of activities, including developing civic sensitivity, participation in building civil society, and benefitting the common good. Civic engagement encompasses the notion of global citizenship and interdependence. Through civic engagement, individuals—as citizens of their communities, their nations, and the world—are empowered as agents of positive social change for a more democratic world" (2009, p. 9). Far from all encompassing, this definition is only one of many that Jacoby describes. The reader is encouraged to explore Jacoby's work in order to better understand the complexities of defining the broad concept of civic engagement.

Community service (or volunteering): Bringle, Hatcher, and Holland (2007) define community service as "voluntary service conducted by students, staff, or faculty; not necessarily grounded in academic expertise or a representation of the academic mission of the campus" (p. 62). Furco (1996) distinguishes voluntary service from other service activities by emphasizing two important dimensions of all service activities: the "balance between service and learning" and the "intended beneficiary" of the service activity (p. 3). He subsequently defines volunteerism as "the engagement of students in activities where the primary emphasis is on the service being provided and the intended beneficiary is clearly the service recipient" (p. 4).

Internships: Internships, also referred to as "practica," "cooperative learning" experiences, or "field placements," are another form of community-based learning common in the college setting (Mooney & Edwards, 2001, p. 285). Taylor (1988) defines internships as "structured and career-relevant work experiences obtained by students prior to graduation from an academic program" (p. 393). Furco (1996) extends the definition beyond career-related activities, suggesting that internships "engage students in service activities primarily for the purpose of providing students with hands-on experiences that enhance their learning or understanding of issues relevant to a particular area of study" (p. 4). In contrast to volunteerism, which highlights the provision of service to a community, internships focus on providing

students with practical experiences conducive to learning (Furco, 1996). Note, however, that not all internships are examples of service learning, and not all service learning experiences are internships.

Regardless of the term(s) or definition(s) one adapts to describe service learning, it is supported by two critical principles that can assist the research professional with the development of measurable outcomes. First, service learning should benefit both the learner and the entity in the community being served. Second, service learning should incorporate a time for learner reflection after the fact. This key component typically takes place in a classroom setting. The opportunity for students to share their viewpoints and the feelings they experienced during the activity is an important aspect of the process. These principles are part of a larger group of principles found in the "Principles of Good Practice for Combining Service and Learning: A Wingspread Special Report" (Campus Compact, 2009). This landmark document is discussed later in the chapter.

Historical Perspective

Now that the definitions and benefits of service and community-based student learning have been explored, we turn our attention to the historical roots of this pedagogical approach. By better understanding the history of service and community-based student learning, we can better anticipate its future and further enhance its use to support student success. Certainly, the concept of service and community-based student learning is not new to higher education. The beginnings of higher education in America were heavily influenced by the Puritan concepts of religion, morality, and civic responsibility. Morison (1936) stated that the founding of Harvard in 1636 was due in part to "a firm determination to transplant English civilization as a whole bound up with their desire to purify it in the translation of all 'corruptions' in order that sober and God-fearing people of English speech might lead a life at once civilized and Christian" (p. 4). Rudolph (1990) expands on this notion by indicating that Harvard was founded to educate citizens "intending to lead lives no less than the purest, aspiring to serve God and their fellow men in the fullest" (p. 5). He goes on to state "of course a religious commonwealth required an educated clergy, but it also needed leaders disciplined by knowledge and learning, it needed followers disciplined by leaders, it needed order" (p. 7).

Of course, this line of thought was not isolated to Harvard. Godbold (1944) indicates that while the College of William and Mary was established in 1693 to provide a supply of clergy, it was also founded to ensure "that the youth were piously educated in good letters and manners" (p. 5) Higher education and religion continued to be inextricably linked through the middle of the 19th century. Kohlbrenner (1961) stated that "By the time of the Civil War there had been founded 182 permanent colleges, and out of these 175 were under the control of various religious denominations" (p. 46). Although religious education remained a mainstay of American colleges in the 19th century, for many people, the role institutions play in educating leaders became even more important. Sugrue (2000) discussed, for example, the establishment of the University of

South Carolina as critical to developing relationships of young men and assuring the political strength of the southern states.

Eventually, the importance of gaining a religious education decreased as an emphasis on learning objective scientific methods increased. Diamond and Copre (2008) point to two events leading to this phenomenon: the rise in economic prosperity as a result of World War II and the Cold War and the federal government's growing relationship with higher education. In the postwar decades, American higher education has struggled to understand the relationship between religion, morals, and civic engagement while at the same time respecting the non-secular nature of local, state, and national governments. Boyer (1987) posits that by the 1960s, American colleges moved toward a non-secular approach. The author argues the ideals of developing the whole student remained, for the most part, but students were left to their own exploratory approaches regarding civic engagement and community.

As mentioned earlier, there has been a renewed effort toward the use of higher education to advance the common good. Again, this concept is not new to higher education. Since 1862 multiple federal and state legislative actions have assisted in moving the concept of service and community-based learning forward. Since the 1960s there have been several key legislative actions to include the 1973 Domestic Volunteer Service Act and 1990 National and Community Service Act. Additionally, several community-focused organizations have been created to include VISTA in 1964 and AmeriCorps in 1992. The National Service-Learning Clearinghouse (2013) website provides an overview of national service with key legislative actions, dates, and accomplishments associated with community engagement and service learning. In addition, the Corporation for National & Community Service is a useful resource for those higher education professionals interested in better understanding and measuring community-based programs.

Recent Trends

In 2006, the Carnegie Foundation for the Advancement of Teaching took the unprecedented step of creating an elective classification in order to "recognize important aspects of institutional mission and action that are not represented in the national data." This voluntary classification goes so far as to require the applying institution to disclose whether "community engagement is a priority in its mission statement (or vision) or not" (Carnegie Foundation, 2013). The 2008 presidential election provided additional momentum to higher education institutions when considering community involvement. Shortly after the election, the Association of American Colleges and Universities released a statement to address the role that service and community-based learning had in the election process:

> This historic moment was made possible by many years of struggle—across all parts of U.S. society—for the expansion of equality, justice, opportunity, and inclusion. The nation's colleges and universities have played a significant role in this long-term effort. Colleges and universities of all sorts have made civic, diversity and democratic learning a central commitment. They have engaged

> their students and their communities with the challenges and responsibilities we face as a diverse democracy. And young people all across the country—including hundreds of thousands of today's college students who played such an active role in this election—helped bring about this historic day. (Association of American Colleges and Universities, 2008)

Further evidence of the magnitude of this trend is provided by Dey and Associates (2008), who conducted a study of civic engagement at 23 diverse higher education institutions in the United States. Their findings reveal that 93% of students and 97% of administrators, faculty, and staff believe community engagement should play a prominent role in education. Further, AAC&U recently released a report in conjunction with the Department of Education and the Global Perspective Institute called a Crucible Moment: College Learning and a Democracy's Future. The report concludes:

> To be an American means to take responsibility for democratic purposes, practices, vitality, and viability. But unlike liberty, civic knowledge and capability are not bestowed at birth. They are hard won, through education at all levels and through taking seriously the perspectives of others. Democratic insight and competence are always in the making, always incomplete. Therefore, civic learning needs to be an integral component of every level of education, from grammar school through graduate school, across all fields of study. It should also be an important part of our informal educational practices for young people and adults, woven into every community and region in the nation. (Association of American Colleges and Universities, 2012)

This study highlights the critical importance of community engagement and civic education, which, in an age of decreased funding and increased requirements for accountability, will rely on measurable outcomes in order to ensure their continuation and contribution to student success. Prior to this report, John Saltmarsh of Campus Compact made the following statement:

> Support for service learning and other civic engagement activities in higher education is stronger now than at any other time in recent history. Civic engagement is featured in the strategic agenda of nearly every national higher education association, including the American Council on Education, Association of American Colleges and Universities, the American Association of State Colleges and Universities, the American Association of Community Colleges, the American Association for Higher Education, Campus Compact, the Council of Independent Colleges, and the National Association of Student Personnel Administrators, and others, including an increasing number of disciplinary associations. The powerful attraction of civic engagement is in its broad appeal; there is room inside the civic engagement tent for the inclusion of issues of community development, student leadership, academic leadership,

> mission reclamation, pedagogical excellence, engaged scholarship, civics education, the renewal of liberal education, and more (Saltmarsh, 2005, p. 52).

Certainly, a call for meaningful community engagement has been made, and it has been accepted in the United States by the greater higher education community. Of course, this far-reaching trend of incorporating service and community-based student learning into higher education will be expected to produce measurable results—not only in terms of student success, but also in identifying areas in which to improve. As a result, the higher education research and assessment community will most certainly be involved in this process going forward.

The Benefits of Service and Community-Based Learning Experiences for Students

Corresponding with the increased commitment to providing students with community-based learning opportunities has been increased scholarly attention to the relationship between these activities and different student-learning outcomes. In fact, one estimate suggests that there are nearly 600 published studies exploring the various issues related to student participation in a wide range of community based-learning experiences (Furco, Jones-White, Huesman, & Gorny, 2012). In general, the results from the extant research have explored six distinct areas in which community-based learning experiences are expected to beneficially impact student development (Furco, Jones-White, Huesman, & Gorny, 2012). This section highlights some of the findings in each of these areas.[2]

The first area in which community-based learning experiences are expected to influence student outcomes is in student learning and academic success (Eyler, Giles, Stenson, & Gray, 2001; Furco & Root, 2010). Some of the most common measures of student success in higher education literature are student persistence and graduation. Not surprisingly, there is an inherent interest in assessing the potential linkage between community-based learning experiences and these outcomes. Unfortunately, results in these areas have not been conclusive. Only a few studies have identified direct associations between community-based learning experiences and persistence and graduation, most notably identifying associations between service learning participation and the intent to reenroll (Bringle, Hatcher, & Muthiah, 2010; Gallini & Moely, 2003). However, the research on community-based learning has been more successful in identifying positive associations between service learning and other antecedents of student success, such as higher levels of academic engagement and satisfaction (Moely, McFarland, Miron, Mercer, & Ilustre, 2002; Gallini & Moely, 2003), improved critical thinking (Sedlak, Doheny, Panthofer, & Anaya, 2003), increased faculty interaction (Astin & Sax, 1998), better class attendance (Markus, Howard, & King, 1993), and improved general- (Astin & Sax, 1998; Crone, 2013) and discipline-area (Moely, McFarland, Miron, Mercer, & Ilustre, 2002; Markus,

[2] For a more detailed documentation of the literature on the effects of service learning on college students, we recommend Eyler, Giles, Stenson, and Gray (2001) and Furco and Root (2010) as excellent starting points. These studies helped shape this section. For individuals interested in an evaluation of the evidence of the benefits of service learning, we recommend the meta-analyses conducted by Conway, Amel, and Gerwein (2009) and Yorio and Ye (2012).

Howard, & King, 1993; Astin & Sax, 1998) knowledge. In addition, research also suggests that service participation contributes to students' academic ambitions. For example, work by Astin and colleagues found that students reporting volunteer participation were more likely both to aspire for and be prepared for the pursuit of an advanced degree (Astin & Sax, 1998; Astin, Vogelgesang, Ikeda, & Yee, 2000).

A second area of benefits associated with community-based learning experiences is contribution toward the personal development of students (Eyler, Giles, Stenson, & Gray, 2001; Furco & Root, 2010). In particular, the research has identified three main benefits to the personal development of students associated with service learning participation: increased self-efficacy (Simons & Cleary, 2006; Astin, Vogelgesang, Ikeda, & Yee, 2000), improved self-esteem (Sedlak, Doheny, Panthofer, & Anaya, 2003), and development of prosocial behaviors (Batchelder & Root, 1994). Research has also documented that service learning experiences have the potential to contribute to different elements of a student's identity development, such as the development of the "caring self" (Jones & Abes, 2004; Rhoads, 1997) as well as racial identity (Simons et al., 2011). Finally, leadership skill development is another benefit associated with service experiences as students participating in a service experience have reported higher levels of leadership ability (Astin & Sax, 1998; Vogelgesang & Astin, 2000; Astin, Vogelgesang, Ikeda, & Yee, 2000).

A third area in which community-based learning experiences are associated with positive student outcomes is in contributing to learners' social and interpersonal development (Eyler, Giles, Stenson, & Gray, 2001; Furco & Root, 2010). Prominent among this research is the finding that community-based learning experiences have a profound effect on the way students think about social problems (Batchelder & Root, 1994; Fenzel & Dean, 2011; Simons et al., 2011; Giles & Eyler, 1994). Additionally, research has linked community-based learning experiences to increased appreciation for racial diversity and racial tolerance (Hunter & Brisbin, 2000; Simons et al., 2011) and better understanding of the relationship of the self to the community and concepts of racial privilege (Jones & Abes, 2004; Simons et al., 2011; Iverson & James, 2013; Morgan & Streb, 2001; Fenzel & Dean, 2011). In addition to these outcomes, students engaged in service learning are also more likely to recognize the importance of community involvement (Hunter & Brisbin, 2000), to emphasize the importance of the university in solving social problems (Crone, 2013), and to stress the importance of social justice (Einfeld & Collins, 2008; Fenzel & Dean, 2011).

A fourth area in which community-based learning experiences may influence students is by contributing to their ethical and moral development (Eyler, Giles, Stenson, & Gray, 2001). Despite a strong theoretical foundation tracing its roots to the work of John Dewey, Bernacki and Jaeger (2008) and Eyler, Giles, Stenson, and Gray (2001) note that results in this area have largely been mixed. They report that only a few studies identified positive associations in moral development between students who participated in service learning versus students who did not, while other studies observed no effect. While recent studies have also failed to identify definitive associations between community-based learning and moral development, research has begun to

identify positive linkages with certain aspects of moral development such as heightened moral reasoning (Lies, Bock, Brandenberger, & Trozzolo, 2012) as well as increased compassion and sensitivity (Bernacki & Jaeger, 2008), empathy (Wilson, 2011), and virtue (Fox, Jones, Machtmes, & Cater, 2012). Additionally, students participating in service learning have also reported that "their service-learning experiences caused them to reflect on their values, beliefs, and attitudes in a way very few other activities had encouraged" (Jones & Abes, 2004, p. 154).

A fifth area in which community-based learning experiences may affect students is by contributing to their democratic and civic development (Eyler, Giles, Stenson, & Gray, 2001; Furco & Root, 2010; Finley, 2011). Probably one of the most frequently identified civic benefits of community-based learning is its association with civic engagement. For example, research has frequently shown that students who have engaged in service learning report higher levels of commitment to future service (Weber & Weber, 2010; Moely, McFarland, Miron, Mercer, & Ilustre, 2002; Crone, 2013; Giles & Eyler, 1994; Astin & Sax, 1998; Astin, Vogelgesang, Ikeda, & Yee, 2000). In addition to commitment to service, research also suggests that service learning participation contributes to students' feeling of political efficacy (Rocha, 2000; Giles & Eyler, 1994; Moely, McFarland, Miron, Mercer, & Ilustre, 2002; Iverson & James, 2013). Other potential civic benefits include increased political attention and awareness (Seider, Gillmor, & Rabinowicz, 2010), heightened political engagement and participation (Rocha, 2000), intensified feelings of civic responsibility (Crone, 2013), and more refined understanding of citizenship (Iverson & James, 2013).

A sixth area in which community-based learning experiences may affect students is by contributing to their professional and career development (Eyler, Giles, Stenson, & Gray, 2001; Furco & Root, 2010). In particular, research has identified that students engaged in service learning are more committed to service-oriented professions as a career (Vogelgesang & Astin, 2000; Astin, Vogelgesang, Ikeda, & Yee, 2000; Seider, Gillmor, & Rabinowicz, 2010). Additionally, research has frequently indicated that the community interaction facilitated by service learning contributes significantly to the career self-efficacy of professionals in various service-oriented occupations such as teaching (Gross & Maloney, 2012; Cone, 2009), counseling (Barbee, Scherer, & Combs, 2003), social work (Williams, King, & Koob, 2002), and business (Tucker & McCarthy, 2001).

Principles of Good Practice for Combining Service and Learning

There has been a pervasive belief that "best practices" are the foundation of improvement. As such, it is helpful to review guidelines for service and community-based student learning. As mentioned earlier, a Wingspread Conference led to the establishment of the highly regarded "Principles of Good Practice for Combining Service and Learning" (Campus Compact, 2009). In all, more than 70 organizations participated in the conference. This conference is widely considered a landmark event for service and community-based student learning, and the 10 principles generated from it continue to apply today. Those principles state:

- An effective program engages people in responsible and challenging actions for the common good.
- An effective program provides structured opportunities for people to reflect critically on their service experience.
- An effective program articulates clear service and learning goals for everyone involved.
- An effective program allows for those with needs to define those needs.
- An effective program clarifies the responsibilities of each person and organization involved.
- An effective program matches service providers and service needs through a process that recognizes changing circumstances.
- An effective program expects genuine, active, and sustained organizational commitment.
- An effective program includes training, supervision, monitoring, support, recognition, and evaluation to meet service and learning goals.
- An effective program ensures that the time commitment for service and learning is flexible, appropriate, and in the best interests of all involved.
- An effective program is committed to program participation by and with diverse populations.

Ten years afterward, another gathering was held involving university presidents, provosts, deans, and faculty members at the Johnson Foundation Wingspread Conference Center. The conference was coordinated by the University of Michigan Center for Community Service and Learning, with sponsorship by the Association of American Universities, American Association for Higher Education, American Council on Education, Association of American Colleges and Universities, Campus Compact, New England Resource Center for Higher Education, University of Pennsylvania Center for University Partnerships, and the Johnson Foundation, with support from the W. K. Kellogg Foundation. This conference resulted in a document titled the "Wingspread Declaration on Renewing the Civic Mission of the American Research University." This work provides a vision of civic engagement and pays special attention to the role of students, faculty, staff, administrators, and the institution. It contains a clear message that civic engagement is a process that requires active participation of all entities at the institution (Campus Compact, 2009).

Key Organizations

As mentioned in various sections of this chapter, the establishment of service and community-based student learning efforts is not a recent phenomenon. Fortunately, multiple agencies exist to promote and develop this endeavor. Many of these entities provide detailed descriptions of service and community-based learning projects as well as a wide variety of research studies and suggestions for further research. Although there are *many* organizations involved in this work,

we discuss seven here to provide the reader with a sampling of the quality information available through these national entities.

American Association of Colleges and Universities (AAC&U): According to the AAC&U, it is a "leading national association concerned with the quality, vitality, and public standing of undergraduate liberal education." One of the five primary goals of the organization is to provide information pertaining to civic, diversity, and global engagement. Although focused on liberal education, the AAC&U provides publications containing research related to this endeavor. Additionally, this organization serves as an advocate for higher education and promotes programs and projects dedicated to developing institutional general education and core curriculum programs (http://www.aacu.org/index.cfm).

ASHOKA: This organization offers a voluntary designation called the Changemaker Campus. To date, there are 22 higher education institutions that have earned the designation, and the organization's goal is to have 30 by 2015. The designation focuses on the concept of social innovation education. One of the requirements for a Changemaker designation is "a deep conviction and understanding of what the institution has to contribute to the transformation of higher education and impact on solving global problems." The organization's website offers a variety of resources including written reports, podcasts, and Changemaker criteria (http://ashokau.org/).

Campus Compact: According to its website, "Campus Compact is a national coalition of more than 1,100 college and university presidents—representing some 6 million students—who are committed to fulfilling the civic purposes of higher education." The organization was founded in 1985 and purports to be the only national organization to focus specifically on "campus-based" civic engagement. The organization is represented by constituents from public and private, as well as two- and four-year, institutions. This organization maintains a large inventory of statistics related to civic engagement as well as research and assessment tools useful to the research professional. Its website provides a plethora of information useful in educating the larger campus community when discussing the concept of civic engagement. In addition to the national organization, there are currently 35 state offices (http://www.compact.org/).

Carnegie Foundation for the Advancement of Teaching: The Carnegie Foundation is well known in the higher education community for providing higher education with a taxonomy, or classification system, in which to group colleges and universities. In 2006, the Carnegie Foundation introduced a voluntary classification called the Community Engagement Classification. The classification, as stated on the Carnegie Foundation website (Carnegie Foundation, 2013), "describes the collaboration between institutions of higher education and their larger communities (local, regional/state, national, and global) for the mutually beneficial exchange of knowledge and resources in a context of partnership and reciprocity." This voluntary designation was awarded to 76 institutions in 2006 with an additional 84 institutions receiving the designation in 2008 and more than 140 in 2010. Each institution applying for the classification is required to document meaningful assessment practices related to community engagement with an additional requirement of describing how the assessment data was used.

With the increased accountability requirements, higher education professionals involved in research and assessment have been serving and will continue to serve a vital role for any institution pursuing this classification (http://www.carnegiefoundation.org/).

Community Based Partnerships for Health (CCPH): As the name implies, this nonprofit organization assists communities and higher education entities to develop partnerships through health-related activities. Founded in 1996, the organization reports partnerships with more than 1,800 communities in North America and the world. The CCPH website provides research-related materials including reports, presentations, and peer-reviewed journal articles. The site also contains information related to Institutional Review Board (IRB) and ethics issues related to partnerships between campuses and communities (http://depts.washington.edu/ccph/).

Corporation for National and Community Service: This organization is a federal agency that helps more than 5 million Americans improve the lives of their fellow citizens through service. They work with local partners to tackle some of the most pressing challenges facing our nation. They invest in thousands of nonprofit and faith-based groups that deal with these challenges. These groups include AmeriCorps, Senior Corps, the Social Innovation Fund, the George H. W. Bush Volunteer Generation Fund, and more. Their purpose is to serve, build, and make an impact that changes lives and communities (http://www.nationalservice.gov/).

Learn and Serve America: This organization is dedicated to serving communities throughout the United States by maintaining a clearinghouse for service and community-based learning activities for students in K-12 and higher education. Additionally, the organization provides useful documents such as issue briefs, fact sheets, and annual reports related to these activities. The higher education section of their website provides information on topics ranging from general issues (e.g., defining service learning) to academic-disciplines (e.g., engineering education and service learning)—information that should be useful to research and assessment personnel interested in this approach (http://www.servicelearning.org/).

Available Measures

Many professionals who support student success with research, analysis, and assessment are familiar with national research organizations such as the National Survey of Student Engagement (NSSE) and the Higher Education Research Institute (HERI). These organizations provide a link to on-campus measures related to the student experience including measures of service and community-based student learning. The survey instruments provided by these organizations are some of the most widely used instruments for collecting student engagement and behavior information in higher education. In fact, more than 1,500 institutions have participated in the NSSE since 2000 (National Survey of Student Engagement, 2013), and approximately 1,900 have participated in the UCLA based CIRP Freshman Survey which has been in existence since 1966 (Higher Education Research Institute, 2010). Each of these organizations offers services to, and has surveys for, two- and four-year institutions. This large-scale effort has resulted in a

plethora of benchmarking opportunities; moreover, there is a strong chance that someone at an interested institution will have access to these data.

In addition to benchmarking opportunities, instruments produced by both HERI and NSSE also afford researchers with opportunities to conduct longitudinal studies to measure the indirect learning of students while on campus. For example, HERI offers a Freshman Survey and a College Senior Survey (CSS) while NSSE offers a Beginning College Survey of Student Engagement (BCSSE) to be administered prior to or at the beginning of the freshman year.[3] Institutions that have participated in these surveys have ready access to relevant questions and responses to assist in beginning or furthering the discussion of service and community-based student learning on their campus. Additionally, these datasets have been well researched over the years, and much of the data collected is available on the NSSE and HERI websites.

Conclusion

This chapter provides a glimpse into the complex field of service and community-based student learning. As a group, higher-education professionals involved in research, analysis, and assessment in support of student success possess the technical and institutional knowledge necessary to better understand this complex issue. Their ability to identify positive outcomes among students as a result of these learning activities will be of great benefit to their institutions and to the higher education community as a whole.

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[3] NSSE also has a Faculty Survey of Student Engagement, a Community College Survey of Student Engagement, and a Community College Faculty Survey of Student Engagement. HERI has a faculty survey and a survey for community college faculty.

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The Role and Impact of Technology and Online Learning

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This chapter explores the role and impact of technology on learning, especially online education, describing how transparency, outcomes assessment, learning analytics, and expanded roles for faculty and staff involved in assessment, research, and analysis complement each other.[1] Learning technologies are often viewed as a strategic investment that promises to allow institutions to extend access to underserved groups, to satisfy increased student demand for online and mobile access, and to improve the efficiency of the teaching and learning process. However, realizing these promises also requires effective cooperation and staff competency in leveraging technology. Cooperation and technological competence are necessary in order for educators to understand how well students are responding to the education provided, how they are progressing, and how effectively faculty are providing instruction, assessing student achievement, and supporting student learning. All of this collaboration and use of technology must be accomplished in ways that clearly support the institution's mission with regard to educational outcomes achieved by its students. When executed well, institutional leaders can use these technology investments to measure outcomes and communicate results to students, faculty, staff, and supporters who are interested in whether the institution is living up to its mission and effectively using its resources.

Today's institutional leaders are responsible for producing record numbers of college graduates with relevant competencies at a faster rate and for less cost than ever before. While forecasting the specific educational demands of the U.S. labor market requires some specificity and nuance (Barton, 2008), the prevailing political belief is that the American higher education system needs to be more productive (Spellings, 2006) while providing higher quality outcomes at lower cost (Owusu-Ansah, Neill, & Haralson, 2011). Institution leaders have responded to these raised expectations, with enrollment in degree-granting higher education institutions having increased at an accelerated rate over the last 20 years (Snyder & Dillow, 2010). Despite this growth, U.S. institutions will need to be even more effective in order to accomplish President

[1] This chapter includes discussion of several specific organizations and software. The inclusion of specific examples is for illustrative purposes only and does not represent endorsement by the *Sourcebook*, CSRDE, the authors, or the publisher. Conversely, failure to mention specific organizations, programs, or components of software does not indicate a negative comment about them.

Obama's ambitious goal of the nation becoming an international leader in the percentage of college-educated adults by 2020 (Hartle, 2009). To these ends, learning technologies are often viewed as a strategic investment that can increase productivity by extending educational access to new students and by improving the efficiency of the learning process to help more enrolled students graduate. Nevertheless, though there have been some case studies on success stories, many institutions struggle to implement learning technologies effectively, thus failing to realize the anticipated benefits of the effort (Azer, 2011). These challenges fit a disappointing pattern in higher education with respect to maximizing student success and improving student learning outcomes (Bok, 2008).

Leveraging learning technologies can be even more challenging at institutions with highly decentralized decision-making structures. Because many technologies have low implementation barriers for savvy faculty users, successful use can be unevenly distributed, and without attentive and strong leadership the institution can develop redundant business processes and isolated technical systems known as shadow IT systems (Behrens & Sedera, 2004). These isolated implementations can't realize the benefits of a comprehensive and unified technology strategy. Academic leaders sensitive to these complexities and risks should be motivated to ensure learning technology projects are systematically planned, executed, and measured at an enterprise level.

Student Outcomes and Institutional Transparency

Several voluntary efforts have attempted to advance broader transparency about learning outcomes by reporting publicly on programs' expected learning outcomes and the degree to which graduates demonstrate those outcomes (for details on these transparency efforts, see Table 1). Institutions have taken advantage of the web to share these data.[2] Information about university graduates' career outcomes is also gathered through surveys in studies that seek to determine how students advance in their profession as a result of their education. These transparency efforts help prospective college students make well-informed enrollment decisions. A secondary purpose of outcome transparency is that it gives institutions incentives to promote student learning and achievement, which can then also promote the institution's reputation for quality. For example, program reviews might include an analysis of the demonstration of learning outcomes and prioritize relevant curricular or instructional investments. Despite these noble intentions, data on program-level learning outcomes are rarely actually reported upon across the most prominent higher education transparency initiatives, including the Voluntary System of Accountability's *College Portrait*, National Association of Independent Colleges and Universities' *U-CAN*, and Transparency by Design's *College Choices for Adults*.

There has been a mixed record with regard to reporting student learning outcomes publically. The Voluntary System of Accountability reports university-level outcomes, but few

[2] In fact, the Higher Education Opportunity Act of 2008 encourages use of the web for posting various types of institutional data. http://nces.ed.gov/pubs2010/2010831rev.pdf

Table 1. Cross-institutional transparency initiatives in higher education

Organizing Agency	*Report*	*Metrics*	*Website*
American Association of Community Colleges	VFA	The Voluntary Framework of Accountability (VFA) is the first comprehensive national accountability system created by community colleges, for community colleges.	http://www.aacc.nche.edu/Resources/aaccprograms/VFAWeb/Pages/VFAHomePage.aspx
National Association of Independent Colleges and Universities	U-CAN	Admissions, enrollment, academics, student demographics, graduation rates, most common fields of study, transfer of credit policy, accreditation, faculty information, class size, tuition and fee trends, price of attendance, financial aid, campus housing, student life, campus safety, average loans at graduation, undergraduate class-size breakdown, and net tuition	http://www.ucan-network.org/
National Center for Education Statistics	College Navigator	General information; tuition, fees, and estimated student expenses; financial aid; enrollment; admissions; retention and graduation rates; programs/majors; varsity athletic teams; accreditation; campus security; federal loans	http://nces.ed.gov/collegenavigator/
U.S. Department of Education's College Affordability and Transparency Center	College Scorecard	Costs, graduation rate, loan default rate, median borrowing, employment	http://www.whitehouse.gov/issues/education/higher-education/college-score-card

Voluntary System of Accountability	College Portrait	Student and campus characteristics, cost of attendance, success and progress rates, campus safety, class size, student experiences on campus, and student learning outcomes	http://www.collegeportraits.org/
WCET and Transparency by Design	Transparency by Design initiative	Institutional overview, student demographics, student engagement, alumni outcomes, program learning outcomes, internal evidence of student learning, and results of external exams/assessments	http://wcet.wiche.edu/advance/transparency-by-design

institutions provide assessment data. The Transparency by Design initiative was committed to reporting on program learning outcomes and offers learning outcome assessment data from some institutions, but it failed to become self-sustaining and has been retired. In contrast, the U-CAN website claims that learning outcomes are not reported because potential students aren't interested in this information, the data would diminish the usability of the website, and that it would be difficult to format for publication on the website. More work is needed for these transparency systems to have relevance to prospective students or to function as a driver of institutional improvements in learning.

Despite slow progress in these public transparency efforts, several commercial agencies have begun to offer technical tools designed to support aligned curricular, instructional, and assessment practices. Technology implementation can now leverage the capabilities of a growing number of commercial solutions to establish a technical infrastructure for measuring learning outcomes and managing assessment data (Hutchings, 2009). As more vendors offer similar assessment services to institutions for similar purposes, industry groups like the IMS Learning Consortium will have an opportunity to create interoperability standards that promote cross-institutional collaborations. As these products connect instructional practices with program and institutional learning outcomes, a deeper level of transparency will become a possibility that may have more relevance to faculty and their profession. The following sections describe emerging technologies for online learning and assessment, and the potential for learning analytics that they offer.

Technologies for Online Learning

Historically, distance education programs focused on serving the needs of students unable to attend a campus (Larreamendy-Joerns & Leinhardt, 2006); however, that unique focus is now

changing as more people pursue a higher education degree online. Student interactions with online learning can range from supplementing classroom-based instruction, through an approach known as blended learning, to participating in fully online programs that require an integrated technical infrastructure. As of 2009, an estimated one out of four higher education students was engaged in some form of online learning (Allen & Seaman, 2010). Moreover, the growth rate of online learning has consistently outpaced higher education in general for the last seven years (Allen & Seaman, 2010). This growth is expected to continue as several industry leaders foresee learning technology as a core differentiator of institutions among both students and corporate partners (Glenn, 2008). Human resource professionals report favorable changes in the perception of online learning degrees, although more than 50% feel they are not as credible as a traditional university degree (Society of Human Resource Management, 2009).

Higher education degree programs delivered either fully or partially via the Internet use technology extensively to support learning in the higher education community. Mature third-party learning management systems (LMS) such as Blackboard Learn, Moodle, and Desire to Learn have enabled institutions to implement online courses without the software development costs of building a custom learning system. More recently, cloud-based LMS offerings such as Canvas by Instructure and Coursesites by Blackboard offer even more flexibility and lower cost by providing hosted solutions that eliminate hardware and data center costs for institutions seeking to provide online courses. These solutions also offer higher availability across personal computer and mobile device platforms due to their cloud-based delivery model that enables providers to support continuous deployment of software fixes and upgrades. The capabilities of the LMS include delivering course content into course sections and providing students with access to learning tools. These tools include assignments, tests, grade books, rubrics, text and multimedia content, and links to outside websites, as well as collaboration tools such as discussion forums, private messaging capabilities, blogs, journals, and wikis. Because these tools are configured and controlled centrally, comprehensive data about their access and use can be generated and compared with assessment results, allowing for analytic research on learning, which will be described later.

Cloud computing has also enabled the recent phenomenon of massively open online courses or MOOCs. These offerings take the concept of providing online course content for free—an effort established by MIT's Open Courseware project in 2002—a step further by organizing large-enrollment course experiences that drive thousands or even tens of thousands of students together through prerecorded course materials and other online learning activities. In these experiences students consume video lectures and written course materials, which include automated objective assessments, and they are encouraged to engage in social learning activities via peer assessment and discussion forums. In 2011, Stanford launched three courses that enrolled more than 100,000 students, and this marked the start of venture-capital-funded spin-offs such as Coursera, Udacity, and EdX that are associated with top-tier universities (Dennis, 2012). These providers partner with top universities and faculty to produce online courses that are designed to attract large audiences. Despite attrition rates that can be upwards of 90%, there

is a large amount of hyperbole around the impact of these offerings on higher education. More recently, traditional institutions have sought to leverage these free resources by having students participate online while being supported by local faculty. This approach can work in favor of smaller institutions, allowing them to leverage top-tier content and technology while providing the local instruction and support required to ensure student success.

Large-scale properties that organize content around specific topics for self-paced consumption have also emerged in recent years. Khan Academy is one such example that provides mathematics instruction using short, topic-based videos that are organized in a portal that provides automated exercises and elements of gamification to reward student achievements and to promote their progress through the content. This model leverages Google's video service YouTube to host and serve the video content, which allows alternative points of entry and delivery for the content while also reducing the cost of delivery for the provider. In addition, in an approach known as deep linking, educators can access individual content modules as they are needed to support their instructional efforts. By recommending high quality, free content to students, local faculty can ensure that students are supported with instruction that is individualized to their needs. Another example in this category is Sophia learning.[3] Sophia supports modular learning via deep linking with the additional approach of providing multiple tutorials per topic that each attempt to support a different learning style. This approach provides alternative content to support student learning of challenging material.

Social learning is also a theme that has emerged as new technologies for online learning have attempted to provide access to larger audiences. Common in the MOOC format is the use of peer assessments and discussion forums to support student learning. Peer review and assessment activities have a long history in education; it is only through more recent uses in online education that their use has become common there. In general, the approach involves the provision of an evaluation rubric for the assignment and a mechanism for allocating evaluations across a sample of appropriate reviewers in the system. For example, in a recent Coursera MOOC, upon assignment submission the students are provided with a queue of evaluations for five students in their course. They are asked to apply the rubric criteria consistently and fairly to each of the assignments, and then they are immediately asked to apply the rubric to their own work in a self-assessment. The workflow sequence here asks the student to take their evaluation responsibility seriously, and operates with the expectation that after the student has applied the rubric to five other learners, the student will then be fair in applying the rubric to their own work. Only after completing this substantial workflow will students receive the evaluations and feedback that they were given by other students. MOOCs and other open online courses also leverage social learning platforms explicitly to support student success. OpenStudy is one example of a collaboration platform that supports MOOC courses allowing students to leverage social learning to get peer support. This platform exploits the idea that today's students love Facebook, so why not make a platform for learning that is just like Facebook? The platform works socially by providing social profiles and reward and achievement badges for assisting other users who have

[3] Sophia is wholly owned by Capella Education Company, where both of the authors are employed.

questions. The site is designed so that unanswered questions stand out, and question-askers are notified when other people are looking at their queries. When an answer is provided, the asker can rate the quality of the answer, and a high rating results in additional rewards for the user who supplied the answer. Many MOOCs will send students to Open Study as the forum for collaboration for their courses, which is why viewers will notice many MIT OCW course numbers in addition to the general topic areas. By rewarding performance in this peer-support model, MOOCs are able to support a much larger number of students than they would be able to support with staff alone. Table 2 provides descriptions of and links to the online learning examples mentioned in this section.

Table 2. Examples of technologies for online learning and initiatives in higher education

Title	*Description*	*Website*
Blackboard Learn	Proprietary LMS	http://www.blackboard.com/platforms/learn/overview.aspx
Canvas by Instructure	Open-source cloud LMS	http://www.instructure.com/
Coursesites by Blackboard	Proprietary cloud LMS	https://www.coursesites.com/
Coursera	For-profit MOOC provider	https://www.coursera.org/
Desire to Learn	Proprietary LMS	http://www.desire2learn.com/
EdX	Nonprofit MOOC provider	https://www.edx.org/
Khan Academy	Nonprofit modular content portal	https://www.khanacademy.org/
Moodle	Open-source LMS	https://moodle.org/
OpenStudy	For-profit social learning platform	http://openstudy.com/
Sophia	For-profit modular content portal	http://www.sophia.org/
Udacity	For-profit MOOC provider	https://www.udacity.com/

Online Courses and Outcomes Transparency

As more people access higher education via online degree programs, institutional leaders and stakeholders are also increasingly focused on learning outcomes, which are defined as the knowledge, skills, and abilities of graduates. The question underlying many of these discussions is a concern about the sufficiency of the criteria of success for online courses. Did the student meet a learning objective, and did the learning objective met in the online course or curricula represent appropriate student accomplishment to be described as success? In this environment, online learning and learning outcomes appear to have formed a symbiotic relationship at many institutions, wherein the design requirements of online learning motivate reflection on intended learning outcomes, and the resulting assessment data can illustrate the quality of online degree programs. Outcome alignments, coupled with data generated from online learning, provide a perfect opportunity to leverage learning analytics to monitor ongoing progress and performance against the instructional activities and feedback provided. As a result, institutions are able to study large data sets from student populations and to identify optimal approaches to effective learning.

In an outcomes-based model, faculty leaders build a coherent curriculum that systematically measures student performance and aligns course instruction relative to specific learning outcomes. To achieve a fully aligned outcome-based curriculum, authentic assessment criteria must reside in evaluation rubrics at the learning activity level, and those criteria must align to course competencies or learning objectives, which in turn are aligned to program and university outcomes. In professional programs these outcomes are derived from, and are articulated to, the performance standards set forth by nationally or globally recognized organizations that exist to define, refine, and certify professionals in the discipline.

For example, the Project Management Institute bills itself as the world's leading professional association for project management (http://pmi.org). Curriculum and instructional design in this model utilize a backward design process starting with desired outcomes and supporting competencies, and then the authentic activities and assessment criteria that will measure student performance in their demonstration of the criteria. The intention is that students should benefit from a more efficient learning process that explicitly focuses on understanding and meeting faculty's performance expectations, but in practice achieving these goals can be difficult within established institutional cultures that may value a more serendipitous learning experience. For example, it has been reported that up to two thirds of institutional leaders have experienced faculty resistance to online learning and learning outcomes in general (Green, 2009). Given the required effort to fully embed criteria-aligned assessments across the programs and courses in an institution, creating outcomes-based institutions is certainly a major logistical undertaking, but it is also one that intersects with educational philosophies, decision-making processes, and role responsibilities in traditional institutions.

Strong institutional leadership is believed to be key to establishing a learning outcome assessment system. Several national reform recommendations have focused on the key role of

institutional leadership to advancing outcomes-based curricular and instructional practices. The Spellings commission's report on higher education prominently identified the role of institutional leadership by entitling its report *A Test of Leadership: Charting the Future of Higher Education* (Spellings, 2006). The Association of Governing Boards and Council for Higher Education Accreditation issued a joint statement on the key role of governing boards and chief executive officers in supporting accreditation efforts to assess learning outcomes (Association of Governing Boards & Council for Higher Education Accreditation, 2009). This confidence in the potential of institutional leadership presumes clarity of purpose that many administrators struggle to develop, especially early in their career (Gunsalus, 2006).

In support of these institutional efforts, accreditation officials have been quite explicit in stating their expectations for the assessment of learning outcomes. For example, the Council for Higher Education Accreditation's (CHEA) standards applied to accrediting organizations seeking recognition explicitly call out prominent roles for advancing the quality of academic learning and assessing student achievement. Appropriately, each of the six regional accrediting agencies focus on learning outcomes assessment, and these agencies support institutions with several publications, presentations, events, programs, and workshops. Many institutional leaders have worked to meet these expectations by implementing assessment systems, but several are struggling. Deficiencies in the assessment of learning outcomes are the primary reason institutions are required by regional accrediting agencies to submit additional reports or to host additional site visits (Ewell, Ikenberry, & Kuh, 2010).

Predictably, this focus has had a more noticeable effect on assessment practices (such as the administration of surveys) than on particular operations relevant to advancing student learning outcomes (Kuh & Ewell, 2010). External pressures from accreditation agencies may be effective in stimulating particular compliance changes, but these practices are difficult to execute and integrate into the particular instructional and assessment practices of faculty. High-level processes of continuous quality improvement are often a primary focus of these interactions, which may or may not integrate with the assessment practices of faculty within programs and courses. Indeed, many improvement processes can be implemented with diverse data sets that may only obliquely concern the measurement of learning outcomes. Moreover, accrediting agencies have a tradition of operating privately with institutional leadership, which often doesn't translate into broadly shared institutional goals focused on learning outcomes (Carey, 2010). Some external recognition efforts are working to promote transparency in these processes, such as CHEA, which has a yearly award to recognize high-quality institutional practices in student learning outcomes (Eaton, 2008). When it comes to transparency of outcomes for an online course, the specific intended outcomes can be offered on the same website as the description of the course. Evidence of the achievement of those outcomes can also be made available at the same place.[4]

[4] In addition to the comparison of outcomes against objectives, it is often possible to compare the online course with a traditional course. See http://www.nosignificantdifference.org/ for a discussion of such comparisons that found no significant difference between online and traditional courses.

Learning Analytics and Assessment

An unintentional asset of online learning is that it creates a vast record of transactional data on the behavior of learners and faculty in courses. Learning management systems automatically collect and store data on when learners log into the course room and navigate to particular pages, the amount of time spent on pages, the posting patterns of learners to discussion questions, and many other variables. Some institutions are using these transactional data to answer important questions concerning student success and to develop new interventions targeted to at-risk students (Kolowich, 2009). The systematic use of these insights to improve institutional operations has clear strategic value to institutions attempting to be more effective and efficient. Practitioners in this emerging discipline, often referred to as either *learning analytics* (Long, & Siemens, 2011), *action analytics* (Norris, Baer, Leonard, Pugliese, & Lefrere, 2008), or *academic analytics* (Campbell, DeBlois, & Oblinger, 2007), use large-scale data sets to create new measures to motivate students, inform decisions, or recommend particular actions. This work has advanced significantly through the efforts of the Society for Learning Analytics Research (SoLAR), which is an interdisciplinary network of leading international researchers who are exploring the role and impact of analytics on teaching, learning, training, and development (http://www.solaresearch.org/). As more students enroll in online courses and as learning technologies are used by more institutions, this relatively young field is well positioned to improve institutional operations. Similar analytic approaches have become a sustaining differentiator for business companies (Davenport & Harris, 2007) and baseball teams (Lewis, 2003); higher education should be ripe for similar innovations.

A diverse group of institutions have used analytics to create new measures that help students succeed. Purdue University's Signals was one of the earliest programs to use analytics to inform learners about their likelihood of success in specific courses (Arnold, 2010). The Signals program integrates many data sources, including transactional data from their custom learning management system, to produce a green-yellow-red status for each learner. LMS data has been shown to be an indicator of student success and student engagement (Macfadyen & Dawson, 2010). Moreover, some of these metrics have been shown to be effective predictors of course persistence within the first two weeks of enrollment (Ushveridze, 2009). The metrics and reports from these efforts have been shown to improve student persistence and student success.

A future analytic step will be to connect learning outcome assessment practices with these analytic innovations. Similar to the effects seen with other metrics, this analytic work should help students improve their performance and be more successful in the institution. A secondary opportunity of this work could be the development of a learning science in higher education, in which faculty study, report, and replicate successful teaching practices. Capella University's fully embedded assessment model (FEAM) aligns the assessment of each course room assignment to the measurement of a student's demonstration of their program's outcomes

(Sculthorp & Grann, 2010). Using these alignments, Rasch-based measurement models[5] can be created to measure learners relative to learning outcomes throughout the program by utilizing the faculty's classroom assessments. As more institutions similarly use learning technologies to measure learning outcomes, cross-institutional collaborations among faculty can help clarify the performance expectations for degrees in specific disciplines. Table 3 provides some current tools for evaluating assessments in online learning and outcome-based education.

Table 3. Technologies supporting faculty assessment practices of student learning outcomes

Name	*Description*	*Website*
Accountability Management System by TaskStream	An institutional tool to document, analyze, manage, and archive outcomes	http://www.taskstream.com/pub/AMS.asp
Annotate for Word	A plug-in for Microsoft Word that enables faculty to add pre-defined formative feedback statements as comments	http://www.11trees.com/
*e*Lumen	An integrated assessment system for connecting course assignments with learning outcomes	http://www.elumen.info
Learning Achievement Tools by Taskstream	A course, program, or training tool to facilitate the creation, collection, and assessment of learner artifacts supporting individual and programmatic achievement of articulated standards	http://www.taskstream.com/pub/LAT.asp
Live Text	Web-based solutions for strategic planning, assessment, and institutional effectiveness	https://college.livetext.com/
Steps	A web-based interactive solution for collecting, storing, analyzing, and reporting assessment information	http://stepsforassessment.com/

[5] Rasch models are part of a group of models associated with Item Response Theory as compared to the linear and logistic additive linear models.

TracDat	An enterprise learning outcomes assessment solution	http://nuventive.com/products/tracdat/
Virtual-TA	An outsourced assessment and feedback service that supports faculty evaluation of student work	http://www.virtual-ta.com/
Waypoint	A form-based assessment tool that integrates with curricular goals	http://www.waypointoutcomes.com
WEAVE engaged	A cloud solution for the complex functions and detailed workflow related to gathering assessment data, learning from the results, planning for the future, and documenting and providing supporting evidence for accreditation	http://www.weaveengaged.com/PerformanceCloud.html

Role of Analytic Staff and Faculty

Combining the activity-driven data generation inherent in online learning with aligned criteria performance data from embedded assessments provides new and exciting opportunities for roles across the institution, including for staff involved in assessment, analysis, and research, and for faculty. In this paradigm, these roles are all expanded with regard to the skills, tools, and support required for the successful execution of the educational mission. This section examines these expanded characteristics by role and describes how they must be supported and aligned to achieve the greatest benefit from the application of technology in learning.

Staff members involved in assessment, analysis, and research play a key role in learning technology innovations and are critical to realizing the gains from such investments. The staff must know how data are generated in source systems, how they are transformed into metrics, and how those metrics can best be interpreted and used by different stakeholders throughout the institution. Such work typically includes integrating data sources from multiple sources and systems, defining and reviewing ETL codes (the codes that are used to extract, transform, and load data into the large data stores to support analytic queries), and updating historical reports using new definitions in the planning and execution of long-term cultural transformations. Drawing on diverse competencies, and often coming from various departments depending on the institution, analytic staff will need the skills to collaborate with faculty to ensure that learning technology innovations deliver value without harming current systems of decision making. Technical skills are also critical to being effective, and job requirements can include competency with common software packages for desktop analysis (e.g., Microsoft Excel) and more advanced analytic tools (e.g., SAS, SPSS, R). The particular IT infrastructure employed will also impact

the required skill set; that infrastructure could span data sources that include database management systems, learning management systems, and text and leverage data-analysis-focused programming languages, ranging from Perl running on datasets in Excel on the desktop to Hadoop in the cloud (Padhy, 2012). Given the fast-moving changes in the shift from data warehousing to cloud-based big data approaches, continuous training, and upgrading of systems, having staff become adept with technological tools and skills looks to be an important requirement for success moving forward.

Analytic staffs are involved in a variety of reporting efforts to demonstrate the comparability of the institution's online programs to their traditional classroom programs. These reporting demands come from a variety of stakeholders and are increasingly being institutionalized into federal statute. The Higher Education Opportunity Act of 2008 introduced new monitoring, reporting, and analysis expectations on accreditation agencies for distance education programs (Mcpherson, 2008). Ironically, these heightened and unique demands on online degree programs have co-occurred with a growing consensus about the effectiveness of online learning. The U.S. Department of Education published a meta-analysis of more than 1,000 evidence-based research studies conducted since 1996 on the effectiveness of online learning as compared to face-to-face instruction. The study found that, "on average, students in online learning conditions performed better than those receiving face-to-face instruction" (Means, Toyama, Murphy, Bakia, & Jones, 2009). Similar conclusions have been documented at many institutions, and researchers can help faculty focus on instructional design and delivery issues by making such findings more widely accessible and appreciated.

To enable student success in achieving online learning objectives, it is critical for analytic staff to collaborate with faculty course designers and instructors. Analytic staff need to be able to understand these colleagues' challenges and apply analytic skill to answering faculty members' questions using the data and research capabilities that are present. This can be challenging for institutional leaders given the patchwork nature of American higher education, which sustains diverse institutional missions, traditions of faculty independence, and shared governance structures. In addition, some faculty members have strong negative opinions about learning outcomes and learning technologies in higher education (Fendrich, 2007); these beliefs and assumptions can pose a risk to projects and are best addressed directly. Many learning technologies have the potential to provide value by automating common teaching processes and thus reducing the amount of clerical work faculty members are required to complete (such as maintaining an accurate grade book for students). By identifying the potential benefits and value of learning analytics for faculty, negative opinions can be overcome. For example, analytic data from Coursera MOOCs have been analyzed to understand the massive attrition—why completion commonly appears to be around only 10%. Preliminary research conducted by Coursera determined that the majority of students who enroll are there to explore. Coursera's study showed that completion rates for students who submit the first assignment rise to 40%, and rates for those who pay to obtain the certificate of completion are close to 70% (Kolowich, 2013).

Researchers must also provide accurate reports and analytics for institutions that have limited governance or standardized processes. At smaller institutions, these challenges may be solvable with yeoman-like effort, but universities and colleges are increasingly expected to serve more students with fewer resources. Institutional researchers must use technology to build workaday innovations that support institution-specific processes. Often the data systems required for meaningful analytics require accessing source tables of transactional systems that were never designed for reporting purposes. Such work requires considerable expertise and patience. Luckily, practitioners are often quite willing to support one another's efforts by sharing their experiences and solutions to similar challenges at conferences .Table 4 lists some relevant educational associations that typically have conferences that support learning about the use of technology. Further support is also available to practitioners from specialized industry publications and web resources. Table 5 lists some major technology publications. This support will continue to be a valuable resource to the educational researcher for capitalizing on technical innovations for educational purposes.

Table 4. Major learning technology conferences in higher education

Organization	*Mission*	*URL*
AECT	The Association for Educational Communications and Technology (AECT) is a professional association of thousands of educators and others whose activities are directed toward improving instruction through technology. AECT members may be found in colleges and universities; in the armed forces and industry; in museums, libraries, and hospitals; in the many places where educational change is under way. AECT members carry out a wide range of responsibilities in the study, planning, application, and production of communications media for instruction.	http://www.aect.org
AIR	The mission of the Association for Institutional Research is to support quality data and decisions for higher education.	http://www.airweb.org/
CSRDE	The Consortium for Student Retention Data Exchange holds an annual forum on programs and practices that enhance student success. This frequently includes the strategic use of technology.	http://csrde.ou.edu/web/consortium.html

EDUCAUSE	EDUCAUSE is a nonprofit association whose mission is to advance higher education by promoting the intelligent use of information technology	http://www.educause.edu/
IMS Global Learning	The IMS Global Learning Consortium creates standards for the development and adoption of technologies that enable high-quality, accessible, and affordable learning experiences.	http://www.imsglobal.org/
MERLOT	MERLOT is a free and open online community of resources designed primarily for faculty, staff, and students of higher education from around the world to share their learning materials and pedagogy. MERLOT is a leading-edge, user-centered, collection of peer-reviewed higher education online learning materials, catalogued by registered members and a set of faculty development support services. MERLOT's strategic goal is to improve the effectiveness of teaching and learning by increasing the quantity and quality of peer-reviewed online learning materials that can be easily incorporated into faculty designed courses.	http://www.merlot.org
NMC	The New Media Consortium (NMC) is an international not-for-profit consortium of learning-focused organizations dedicated to the exploration and use of new media and new technologies.	http://www.nmc.org/
NUTN	The National University Telecommunications Network (NUTN) provides networking and professional development opportunities for innovative leaders in the advancement of teaching and learning.	http://nutn.org/
Sloan-C	The Sloan Consortium is an institutional and professional leadership organization dedicated to integrating online education into the mainstream of higher education, helping institutions and individual educators improve the quality, scale, and breadth of education. Membership in the	http://sloan-c.org/

	Sloan Consortium provides knowledge, practice, community, and direction for educators. Originally funded by the Alfred P. Sloan Foundation, Sloan-C is now a nonprofit, member-sustained organization.	
WCET	Our mission is to leverage technology to improve instruction and student learning and to increase access to quality higher education.	http://www.wcet.info/

Table 5. Major learning technology publications in higher education

Publication	*Description*	*URL*
Association for Institutional Research — IR Resources	With more than 2,200 links to external IR Web pages, IR Resources is one of the most comprehensive sites on the Internet for IR professionals seeking information across the spectrum of IR concerns.	http://www.airweb.org/?page=309
Blog U: Technology and Learning	A space for conversation and debate about learning and technology	http://www.insidehighered.com/blogs/technology_and_learning
Campus Technology	*Campus Technology* is the only monthly publication focusing exclusively on the use of technology across all areas of higher education. *Campus Technology* provides in-depth coverage of specific technologies and their implementations, including wireless networks and mobile devices; enterprise resource planning; eLearning and course management systems; “smart classroom” technologies; telecom; Web; and security solutions—all the important issues and trends for campus IT decision-makers.	http://campustechnology.com
Change magazine	*Change* is a magazine dealing with contemporary issues in higher learning. It is intended to stimulate	http://www.changemag.org/

	and inform reflective practitioners in colleges, universities, corporations, government, and elsewhere. Using a magazine format rather than that of an academic journal, *Change* spotlights trends, provides new insights and ideas, and analyzes the implications of educational programs, policies, and practices.	
Edu1World	edu1world.org is a Web 2.0 resource and expert network exclusively for higher education CIOs, professionals, faculty, associations, and vendors who develop, support, and work with technology solutions. It is a community where members from around the world share lessons learned, research best practices and vendor solutions, learn about technology trends, and access the expert content they need to succeed.	http://www.edu1world.org/
Educause Quarterly	*EDUCAUSE Quarterly* is an online, peer-reviewed, practitioner's journal from EDUCAUSE about managing and using information resources in higher education. *EQ* is published in an online-only format with multimedia (graphics, live links, audio, and video) and community-building applications that enhance the magazine's value. Beyond the content, you'll be able to experience and interact with information and others in the community in more engaging ways, all while adopting a more environmentally sustainable approach.	http://www.educause.edu/eq
Educause Review	*EDUCAUSE Review* is the association's award-winning magazine for the higher education IT community. Published bimonthly in print (22,000 distributed copies) and online (more than 50,000 visits per month), the magazine takes a broad look at current developments and trends in information technology, how they may affect the college/university as an institution, and what these mean for higher education and society.	http://www.educause.edu/er
In Focus—	A compilation of articles about recent and	http://www.insidehighered.c

Technology	important developments in key aspects of higher education technology.	om/news/focus/technology
NCAT	The National Center for Academic Transformation (NCAT) is an independent, not-for-profit organization that provides leadership in using information technology to redesign learning environments to produce better learning outcomes for students at a reduced cost to the institution.	http://www.thencat.org/
THE Journal	*THE Journal* is dedicated to informing and educating K-12 senior-level district and school administrators, technologists, and tech-savvy educators within districts, schools, and classrooms to improve and advance the learning process through the use of technology. Launched in 1972, *THE Journal* was the first magazine to cover education technology.	http://thejournal.com
Wired Campus	Each day on Wired Campus, *The Chronicle*'s technology reporters highlight key IT developments and put them in perspective.	http://chronicle.com/blog/Wired-Campus/5

Conclusion

American universities and colleges have a historic opportunity to contribute to the nation's future by improving institutional efficiency and effectiveness using technologies in support of student success. The approaches can support the individual needs of students by improving the efficiency of instruction and by enabling analytics that motivate students and improve their likelihood of success. Much of this support comes through the development of online modules, courses, and programs. Even more comes through course management systems that use the capabilities of the web. Enhancing student success through the implementation of these technologies requires more than a galvanizing national goal; it will take the collective effort of faculty and staff to reform how faculty provide instruction and assess student achievement, and how institutional leaders make decisions, and how employers hire employees. The sweeping scope of these changes warrants reflection, broad collaboration, and public transparency. Professional organizations, accreditation agencies, nonprofits, foundations, and the U.S. Department of Education need to provide a critical service of helping organize and focus institutions.

Analytic staff who support assessment, analysis, and research can help institutions capitalize on these efforts in a variety of ways, such as by deriving new student success metrics,

integrating learning technologies with the institution's reporting and analytic environment, and/or by discovering actionable correlates of student success. Critical to the success of learning technology innovations will be the support of faculty who are often asked to change long-established practices and learn new processes. A productive collaboration between faculty and staff can be invaluable to the success of any learning technology innovation. Faculty value empirical research and may be unsatisfied with the current evidence bearing on new innovations. Moreover, faculty's exposure to the technology for student learning is often mediated through opaque filters of technical reports and institutional-level assessments. Institutional staff should seek ways to actively collaborate with faculty to help build support for effective practices, such as by defining new measures of student success, monitoring efficacy of innovations, and publishing findings. Such collaborations can help build trust and deepen connections with the institution that will benefit future learning technology innovations. Similar to successful social movements, improving the outcomes of the American higher education sector will require more than just talent and information—success will require elevating society's expectations for education, adult learners, and society itself.

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The Use of Campus-Wide Focused Interventions and Student Success

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Increasingly, university goals and learning outcomes that support student success require comprehensive approaches to teaching and learning that span disciplinary, divisional, and organizational boundaries. These include programs such as those focused on the first-year experience as well as new technologies used as pedagogical tools. Thus, new ways of approaching assessment are also needed. The main purpose of assessment is to improve teaching and learning to yield positive outcomes that support student success. To ensure broad-based support for these interventions and their assessment also requires leadership adept at building effective cross- functional teams to manage processes and outcomes. Typically, the assessment of broad-based campus programs is complex and requires the involvement and commitment of faculty, staff, and senior leaders. Faculty from many departments with different intellectual paradigms and staff from many divisions with different professional perspectives must have a common conversation in order to develop campus-wide programs that support student success. Without high-quality assessments, this common conversation will not be as productive as it needs to be.

In this chapter, we explore the development of curriculum-related interventions, addressing (a) purpose and intended audiences, (b) common features across models, and (c) common assessment strategies used to assess the impact of the interventions. Specific interventions to be discussed include writing across the curriculum programs, transition programs, undergraduate research programs, experiential learning programs, and classroom response systems. Three illustrative case studies are presented. The final section concludes with a review of the methodologies and questions that faculty and higher education professionals should consider as they develop effective practice in the assessment and improvement of curriculum-related interventions. The importance of leadership in the recruitment and support of effective teams to build and sustain success for innovative curricular interventions cannot be underestimated.

Writing Across the Curriculum (WAC)[1]

Writing Across the Curriculum (WAC) programs began in the early 1970s to address concerns about student writing. As the name suggests, the goal of WAC programs was to improve student writing and to use writing as a tool to facilitate student learning.

The goals of the WAC program at Monroe Community College (MCC) in Rochester, New York, reflect common WAC program objectives. At MCC, these objectives are student-centered and champion the college's mission of student success through active learning. Through writing, students will:

1. increase understanding of course content,
2. gain the ability to express themselves confidently,
3. enhance their critical thinking/problem solving skills,
4. increase participation in their learning process, and
5. collaborate with others to enrich further their learning and problem solving skills.

(http://www.monroecc.edu/depts/wac/wac_obj.htm)

The basic belief is that students who are better writers are more successful learners.

The Writing Across the Curriculum Movement began, in part, from findings indicating that secondary students spent relatively little time writing compositions. Consequently, when required to write complete papers, their topics were not fully developed. The National Writing Project (www.nwp.org) formed at roughly the same time that WAC programs emerged and with nearly the same mission, namely to improve students' writing and learning. Underlying premises of the National Writing Project are consistent with those of WAC programs, namely that (a) writing should be taught at all levels throughout the curriculum, (b) using a variety of strategies, and (c) teachers should use effective practices for teaching writing.

The first public PhD-granting institution to develop a WAC program was Michigan Technological University, where faculty members were faced with the difficulty of implementing a WAC program in a non-liberal arts environment. In order to accomplish this task, they developed a collaborative model in which engineering faculty and humanities faculty work one-on-one to teach writing using a problem-solving approach that includes concepts familiar to both engineers and composition specialists (cf. Flynn, Jones, Shoos, & Barna, 1990).

The type of WAC program developed depends upon the ethos of the college or university. For this reason, WAC programs will differ from institution to institution. WAC programs have minimally two requirements: (a) writing instruction that is emphasized in the curriculum, and (b) faculty members' exchange of best strategies for effectively engaging students in writing. Due to the nature of WAC courses, small class size is also important.

WAC can occur with either writing requirements in almost all courses and/or a writing-intensive course in almost all disciplines. Ideally, a writing-intensive course should include a series of formal writing assignments that build upon freshman composition courses to teach

[1] This case study was contributed by Chris Koch.

students how to write effectively for desired academic and professional positions. For example, a writing-intensive course at the University of Minnesota is one where writing is comprehensively integrated into the course, explained and practiced, and learned through revision. It is a significant part of the coursework and the grade. Instructors who teach it are skilled in writing instruction (http://onestop.umn.edu/faculty/lib_eds/guidelines/writing_intensive.html).

Since a variety of writing assignments can accomplish this goal and students learn best with repeated feedback, using several shorter writing assignments is often preferred for these courses instead of one large writing assignment with the opportunity to revise. These assignments can also serve to improve critical thinking skills. Practical information regarding writing- intensive assignments and evaluation is provided by Leist (2006). Leist includes sample assignments, checklists, and grading rubrics.

McLeod and Soven (1991), however, argue that effective WAC programs involve writing in nearly every course across the curriculum. Writing portfolios are often the products of such programs. Regardless of whether or not a WAC program includes writing-intensive courses or incorporates writing into almost every course in every discipline, WAC programs require both formal and informal opportunities for faculty to exchange ideas about how best to teach these courses, which suggests that assessment is also taking place.

The National Council of Teachers of English (NCTE) and the Council of Writing Program Administrators (WPA) endorsed a set of principles of effective writing assessment that can serve as the basis of for examining WAC outcomes. These principles are described in a NCTE-WPA white paper.[2]

Case Study Example: George Fox University

The following case study describes how the WAC program developed at George Fox University and shows how assessment was used to refocus and enhance the WAC program. George Fox University is a selective private doctoral research university located in Newberg, Oregon. It has a residential campus. Fall 2012 term enrollments were 3,491; of these, 1,902 were undergraduates. More than 85% of all undergraduates attend full-time. The undergraduate instructional program is balanced between arts and science and professional programs. The undergraduate student-to-faculty ratio is 13:1. Class sizes are kept relatively low with an average class size of about 20 students.

Writing across the curriculum was introduced to George Fox University approximately 20 years ago by Ed Higgins, a professor in writing and literature, who received a Pew grant to train faculty in the best practices for teaching writing across disciplines through workshops and informal meetings. These have continued under the auspices of the Center for Teaching and Learning. Please note that in this case, the curricular intervention was identified by a senior faculty member, who then sought support from external sources, and the university leadership,

[2] See http://www.wpacouncil.org/assessment-gallery to view the white paper as well as assessment narratives from schools examining WAC programs.

who then institutionalized the efforts. Those who make funding available for innovations, whether from a private foundation or the federal government, often influence the direction of new curricular interventions in institutions of higher education.

A recent survey of department chairs shows departments are committed to incorporating writing in the coursework for their majors. They further indicated that more than 50% of the courses within their majors used writing as a learning tool, and more than 60% of the courses focused on discipline-specific writing. A review of current departmental assessment plans reveals that more than 25% of the departments have specific writing outcomes for their majors.

The initial grant also allowed for the establishment of a writing center to provide writing assistance to students. Today, writing assistance is provided to students through the Academic Resource Center (ARC). Satisfaction surveys indicate that 92% of students using the ARC feel that they benefited from working with their writing consultant at the center. Similarly, interviews with consultants indicate that the majority of students experience a positive attitude change toward the ARC and their own writing as a result of using the services provided.

Young and Fulwiler (1990), nevertheless, warned that writing across the curriculum can be undermined due to a lack of leadership, a lack of support from the English or writing department, or a lack of fit within the organizational structure, among other factors. Fitting within the organizational structure is particularly important. WAC programs demand a coordinated effort among faculty, faculty development programs, administrators, and writing centers. The collaborative effort of these groups, and programs, can take on a variety of forms across campuses and should change as WAC programs develop (Condon & Rutz, 2012).

In a WAC program, with everyone playing a role, who is accountable for the program? At George Fox, oversight of the WAC program was not formalized within the university's operating structure. Consequently, who was responsible for the program became unclear over time. Improvements in assessment, however, provided data requiring action, which refocused the organizational support for the program. More recently, the adoption of campus-wide assessment software has allowed departments and administrators to quickly review assessment outcomes regarding writing across academic units. Not only are the outcomes available online, but the writing assessment tools (e.g., rubrics) used in different programs are available, as well. This level of information sharing provides accountability for writing outcomes and cross-pollination across programs regarding effective tools for assessing writing outcomes, thereby improving the mutual mission of the WAC program.

Although faculty ownership is important in developing a successful WAC program, the roles of funding and resources, and the priority given to WAC programs by administrators, are also very important (Perelman, 2011). As previously mentioned, WAC programs develop over time and administrations must be willing to foster and continually enhance that evolutionary process (cf. Condon & Rutz, 2012). Faculty, for instance, are generally encouraged to make better use of technology in the classroom, but incorporating technological developments requires a commitment for funds and resources on the part of administrations. In addition to campus-wide assessment software, automated essay grading (AEG) systems such as Intelligent Essay Assessor

(IEA) can aid WAC efforts (Foltz, Laham, & Landauer, 1999). IEA is an Internet-based tool for scoring electronically submitted papers. It is designed to evaluate essays on the basis of ideas, organization, conventions, sentence fluency, word choice, and voice. Feedback on spelling, grammar, and redundancy can also be provided.[3] Tools like IEA can be extremely valuable considering the increased emphasis on hybrid learning and trends in online education (e.g., massive online open courses). Not everyone, however, sees such tools as appropriate.[4]

It is important to note that writing across the curriculum can occur on several levels. For instance, individual departments or programs can create their own WAC strategies. These strategies can improve writing within the discipline and, with common writing objectives, can also enhance writing university-wide. Since transfer students often transfer in the bulk of their general education requirements, including their writing courses, department-level WAC strategies (sometimes referred to as "writing in the disciplines," or WID) can serve as one way to ensure that transfer students receive similar training in effective writing. In the department of psychology at George Fox University, for example, a required writing-intensive course is required and cannot be satisfied with transfer credit; in addition, two assignments focusing on APA writing standards across all course offerings and mandatory plagiarism training each semester is also required.

Assessing student satisfaction with writing assistance and the importance faculty place on writing are indirect measures of WAC. Within the last five years George Fox University implemented two direct measures of student writing to assess WAC. The first is an evaluation of student writing by the writing and literature faculty. Student writing samples are taken from freshmen writing and senior capstone courses. A rubric is used to evaluate the writing. The rubric includes the clarity with which ideas are developed, organization, word choice and sentence structure, and writing mechanics. Types of writing errors are also cataloged. This cross-sectional approach allows us to compare freshmen and seniors.

The second measure is the ETS Proficiency Profile (formerly the Measure of Academic Proficiency and Progress, or MAPP). The Proficiency Profile is a multiple-choice test examining critical thinking, reading, writing, and mathematics. In particular, the writing items examine students' proficiency on three levels. The ETS link provides a description of those proficiencies (see p. 10 in the User's Manual at http://ets.org/s/proficiencyprofile/pdf/Users_Guide.pdf). The Proficiency Profile is administered during freshmen orientation and again in senior capstone courses. Results are compared annually, and the same students are compared as freshmen and then as seniors.

The structure of these two measures differs, but they assess similar aspects of writing. One of the benefits of using two measures is that they can provide converging evidence. If both

[3] Florida Gulf Coast University offers a case study on the use of IEA at http://www.writetolearn.net/CaseStudies/PKT-FGCUCaseStudyFINAL-10-.pdf For more information about IEA see the Pearson link: kt.pearsonassessments.com/download/IEA-FactSheet-20100401.pdf

[4] For example, see "How to Ace the SAT Essay: StraighterLine interviews Dr. Les Perelman," posted on February 27, 2013, by Barry Lenson (http://www.straighterline.com/blog/how-to-ace-the-sat-essay-straighterline-interviews-dr-les-perelman/).

measures lead to the same outcome, the validity of the finding is enhanced. Complementary measures can be extremely useful when advocating for programs such as WAC. For instance, comparative data from the Proficiency Profile suggest that our students at George Fox University tend to score higher on all three levels of proficiency than what is typical for the test; yet, we can still improve.

Writing evaluations by faculty provided similar findings. Based on these assessment results, the General Education Committee changed the number of required writing courses and a departmental chairs committee approved a proposal to utilize a common rubric for evaluating writing. A common rubric provides continuity in how writing is evaluated across the curriculum, at multiple points in time, from freshmen writing courses to courses within majors to senior capstone courses. It clarifies expectations for students and helps faculty know what writing skills have been taught previously and the skills that they should focus on developing in their students. Additionally, writing skills emphasized within the rubric become focal points in tailored writing workshops. Therefore, the assessment cycle helped clarify the parties responsible for the WAC program and led to changes in the WAC program to facilitate both instruction and future assessment.

This case study helps illustrate that developing and sustaining a WAC program, much like writing itself, is a dynamic and recursive endeavor that requires university commitment from senior leaders, the faculty, and staff; instruction; and ongoing communication and assessment. For example, recent increases in international students in the undergraduate programs at George Fox present additional challenges for writing across the curriculum. As a result, assessment efforts will evolve to address the changing community and foster student success in WAC.

Transition Programs[5]

Across the United States in fall 2011 there were 4,290 degree-granting institutions enrolling 18.1 million undergraduates. Of undergraduate students at four-year institutions that year, 78% attended full time. Of undergraduates attending two-year institutions, 42% were full-time students. Current enrollments have exceeded earlier projections (*The Condition of Education*, 2013). And, unlike college students of earlier times, current students represent the full range of diversities and socioeconomic backgrounds that exist in the United States.

The idea that colleges and universities should help new students adjust or transition to college life is not new. In 1877, Johns Hopkins University created a first-year seminar course. In 1889, Harvard University developed a board of freshman advisors and hired two deans, one of which fulfilled the traditional academic role while the second listened to students and handled their problems—in essence, a dean of students (Upcraft, Gardner, & Barefoot, 2005, p. 278;

[5] Angeles Eames continues the discussion in this and remaining sections.

Brubacher & Rudy, 2006, p. 335). The emergence of a range of professionals to address the needs of students occurred during the 20th century.

The underlying philosophy adhered to by these professionals is the student personnel point of view. [6] This point of view and succeeding iterations of it are rooted in the pragmatic educational philosophy of John Dewey (Evans, 2001). Dewey believed that every individual is worthy of respect, that knowledge can be gained both inside and outside of the classroom, and that every student has the capacity for growth. The student personnel professional views the student holistically and seeks to develop students' cognitive, affective, and communicative capacities so that students are successful and become leaders and contributing members of a democratic society. The legacy of Dewey and student development theorists influenced the development of transition programs over the last forty years, along with three other major influences, namely: college impact studies, enrollment management, and the development of a new center to foster learning about transition programs.

Extensive research related to the impact of college on students and student success has had a significant effect on the development of transition programs. From Kenneth Feldman and Theodore Newcomb's *The Impact of College on Students* (1969) to Alexander Astin's *What Matters in College: Four Critical Years Revisited* (1993), and from Ernest Pascarella and Patrick Terenzini's two-volume work *How College Affects Students* (1991, 2005) to George Kuh's *Student Success in College: Creating Conditions That Matter* (2010), each tome on this topic builds on the work of hundreds of researchers and provides a critical meta-analytical view to support the implications for successful practices in these programs.

The need to more effectively manage college enrollments, along with increased calls for accountability and a focus on college student retention and time-to-degree and graduation rates led to an increased role and importance for transition programs. The location of these programs in an institution's organizational chart depends on the campus culture and resources. The main purpose of a transition program is to enhance student success, typically retention, by providing an orientation to the college and fostering student development by addressing students' unique needs in developing needed and desired skills, abilities, and knowledge within the context of the collegiate environment. To do this, a holistic approach to educating and supporting students

[6] In 1937 the American Council on Education held a two-day conference on problems related to student personnel work, its relationship to other institutional efforts, and the need for research studies in the area. The conference report was titled *The Student Personnel Point of View, (SPPV).* The report defined the nature of student personnel work; defined the philosophy, goals, and objectives for this group of professionals; and is considered one of the foundational documents for the professions in student affairs. It was later expanded in 1949. Essentially it views the purpose of higher education not only as the "preservation, transmittal, and enrichment of culture by means of instruction, scholarly work, and scientific research" but also as serving the goals of a fuller realization of democracy in every phase of living, as education that directly and explicitly promotes international understanding and cooperation, and as education that applies creative imagination and trained intelligence to the solution of social problems and to the administration of public affairs. To accomplish these goals, the *SPPV* noted that it was not sufficient to focus solely on the intellectual development of the student, but that it was necessary to focus on the development of the student as a whole person—his intellectual capacity and achievement, his emotional make-up, his physical condition, his social relationships, his vocational aptitudes and skills, his moral and religious values, his economic resources, his aesthetic appreciations—and in helping him to achieve a balance in his development (The Student Personnel Point of View, *American Council on Education Studies*, 1937 and 1949).

based on student development and learning theories, college impact studies, and the literature on the scholarship of teaching and learning is used. Effective transition programs develop curricula that are guided by a set of learning goals and outcomes that are integrated with the university's mission.

The work of the National Resource Center (NRC) established by the University of South Carolina marked a way to model and support effective transition programs through workshops, national and international conferences, LISTSERVs, publications, and consultation to connect emerging and established programs. Current examples of these programs include summer bridge programs; orientation programs, first-year experience programs, and programs for special populations such as athletes, first-generation students, minority students, and transfer students. The newest developments in transition programming are the sophomore-year experience or second-year programs, and junior- and senior-year programs. For more information regarding program activities, research, and assessments, go to http://www.sc.edu/fye

Basic models for offering first-year experience seminars include credit-bearing extended orientation seminars, academic seminars, professional or disciplinary linked seminars, and study skills seminars (Hunter & Linder, 2005). Some of the forms these first-year-experience programs can take include:

- Extended orientation seminars. These may be open to all students or differentiated for particular groups of students. North Carolina State University offers two seminars and many activities as a form of extended seminar. See http://www.ncsu.edu/fyc/assessment for details of its assessment.
- Academic seminars with a common theme to develop academic skills. North Park University offers a "Dialogue Seminar Course" at the 1000 level. This course focuses on just one question: "Who am I?" Using an interdisciplinary approach, it helps students answer that question while building their oral and written communication skills.
- Academic seminars with varied disciplinary perspectives. DePaul University and Northeastern Illinois University use the city of Chicago as their theme. Common readings focused on college transition and college survival skills and exploration of a variety of disciplines are linked by the theme. Examples of courses offered include "Chicago in Film," "Bridges of Chicago," and "Home and Homelessness in Chicago."
- Professional or discipline-linked seminars (least common). An example would be the University of California–Los Angeles Law School's "Lawyering Skills" course for first-year students. The course combines beginning skills training with elements of traditional legal writing and research. The course explores the relationship between legal analysis and typical lawyering tasks such as effective legal writing and oral advocacy.
- Study skills seminars. These may be credit or non-credit courses offered to some or all students. The seminars are more common in community colleges or in four-year college academic support programs.

First-year seminar programs are often augmented by activities that promote student engagement outside of the classroom. The case study of Northeastern Illinois University describes the development of a first-year experience program and the kinds of assessment data needed at each stage of development.

Case Study Example: Northeastern Illinois University Transition Program

Northeastern Illinois University (NEIU) is a Master's L[7] public, four-year, urban commuter university. Total fall 2012 enrollment included 11,149 students; of these 9,140 were undergraduates. Undergraduates attending full time comprise 60% of the student body. More than 60% say that English is their second language; more than forty languages are spoken by the student body.

At NEIU, a new provost played a key role in identifying the first-year experience program (FYE) as a needed curricular intervention. He took appropriate steps to ensure that the program would be adopted and implemented. These steps included: the formation of Northeastern Illinois University's FYE Task Force, funding faculty grants for new course development in FYE, and the appointment of an FYE director to create the FYE office that provides services to both faculty and students.

NEIU experienced four distinct stages in developing and assessing its first-year experience program. These can best be described as (a) assessment of the need for a program, (b) assessment of resource readiness, (c) program launch, and (d) continued development and assessment. Findings from the assessment conducted at the exploratory stage indicated that retention rates for first-time, full-time students had declined in the preceding four years, though entrance standards had remained the same. Since orientation was not required of students, faculty and staff found that many students did not know what to expect academically or in terms of campus life. An analysis of the trends taking place at peer institutions for the same time period yielded a mixed picture in terms of retention rates. In 2003 and 2004 student surveys, developed at Northeastern Illinois University, were distributed during orientation programs to identify areas for improvement.

An FYE Task Force was formed in 2004-2005 to delve more deeply into the issues and to propose solutions that would enhance the retention and experience of entering students. As a beginning framework to assess the current state and readiness for any new programmatic efforts, "Foundations of Excellence" was used in 2005-2006. This framework, developed by the Policy Center on the First Year of College (now the John N. Gardner Institute for Excellence in Undergraduate Education), is widely used. Foundations of Excellence provides a means of self-study, including a "Current Practices Inventory" for the first year of college and is based on a set of principles, or "dimensions," that guide self-study, assessment, and program development.[8]

[7] Master's L is a Carnegie Classification Category. Institutions in this category enroll 10,000+ students and award at least 50 master's degrees and less than 20 doctoral degrees.
[8] More information about the dimensions can be found at www.jngi.org/foe-program/foundational-dimensions/

Based on the findings of the assessment, the provost appointed a director of FYE to develop and coordinate a new program.

The assessment of organizational structures, space, and funding support alternatives was critical in providing a base for the launch of the program. The self-study demonstrated a need to develop new curricular structures and the recruitment of faculty willing to participate actively in faculty development efforts and the creation of new courses.

The FYE program that was developed at NEIU as a result of these efforts consists of (a) a freshman colloquium, (b) cocurricular components, (c) peer mentoring, and (d) faculty development. The inclusion of these program elements is based on the extensive research literature showing the positive impact of these on student learning and retention. (See the works referenced in the previous Transition Programs section.)

Methods used to assess the impact of the freshman colloquium include (a) use of the First Year Survey (available from EBI), (b) grades, (c) use and analysis of reflective questions and focus groups, (d) examination of retention rates, and (d) use of a rubric developed by Northeastern Illinois University's Committee on General Education, to assess oral communications skills.

The First Year Survey was administered to students enrolled in all course sections of the freshman colloquium during the fall 2008 and spring 2009 terms. This survey provides the opportunity for the university to compare itself against a self-selected peer group as well as to similar Carnegie category institutions. The questions developed specifically for first-year programs cover a wide range of curricular goals and cocurricular experiences. The answers to a particular question can be analyzed, or analysis can be done with regard to a demographic group of interest. The questions are grouped into 15 factors.[9] When compared with schools within its peer group, NEIU showed a statistically higher mean in terms of the factor "Course Included Engaging Pedagogy." Given NEIU's commuter student population, this also showed a need for more planning for out-of-class engagement and linkages of these activities to the course. The university has begun to assess cocurricular experiences, as a result. Some faculty members include cocurricular components in their syllabi and field experiences and assess participation in these as part of the course grade.

The trend has been for retention rates to improve as program improvements are made. As more courses are offered and as more faculty participate in professional development, mean FYE student participant grade point averages (GPAs) showed an increase in comparison to the GPAs of students who did not participate in FYE. As a result of these positive indicators, participation in FYE became mandatory in 2007.

The impact of the FYE program's peer mentoring efforts is assessed in several ways. The Learning Center provides peer mentors for the FYE program and has assessed the effectiveness of the training provided to the mentors through locally developed surveys and qualitative measures such as the use and analysis of reflective questions and focus groups. Assessment of

[9] For more information, please see: http://www.webebi.com/_AsmtServices/FYI/FYI.aspx

student outcomes for two groups of students, the peer mentors and the first-year students, have yielded positive results for each year the program has been in place in terms of GPAs. Peer mentors also reported greater levels of commitment to the university and confidence in finishing their studies as a result of their experience and also made better grades in their own studies.

The director of NEIU's Learning Center also wanted to know if there was a difference in student outcomes as measured by course grades of students who enrolled in freshman colloquiums that were assigned peer mentors versus those that did not have peer mentors. In the earlier phase of the FYE, faculty members could request peer mentors be assigned to a particular class, but faculty were not required to do this. A comparison of student grades in these courses showed that students in courses with the peer mentors made better grades than students in those courses without the peer mentors.[10] As a result of this finding, funding for more peer mentors has increased so that additional sections of the freshman colloquium can be assigned peer mentors.

FYE faculty development assessment includes the assessment of faculty satisfaction with professional workshops and feedback from informal monthly meetings. This feedback allows the coordinator to make program improvements and to develop faculty workshops.

The FYE program at Northeastern Illinois University continues to evolve; more FYE courses and course sections are being offered, and additional modes of assessment are being considered. The use of assessment findings to improve the program is essential. As a result of the success of the FYE program, a new sophomore-year proposal was developed to meet the needs of sophomores.

Key in these retention and assessment efforts, of course, is technology. The use of technology in transition programs has included the use of ePortfolio systems to foster student reflections, the use of learning management systems as part of the coursework, and supplemental learning systems such as MyMathLab by Pearson that uses an interactive online approach so that students self-pace their learning to make greater gains. Some transition programs at other institutions also work in conjunction with the career advising and services offices and incorporate career and life-planning activities that rely on institutionally linked websites such as MyPlan.com. These sites help students assess their personal and career development and develop plans for achieving their goals. With the growing number of older adult students and online learners, some institutions have begun offering online orientation programs or blended models of online and on-campus transition programs (Marling & Jacobs, 2011, pp. 80-81). Technology use is more likely to be effective if the university provides opportunities for administrators, faculty, and students to learn about the various vendors as well as to share ways in which these technologies can be used to enhance learning. A systematic approach can help universities navigate these considerations.[11]

[10] Students may or may not have known whether peer mentors would be assigned to a particular FYE class. We do not know if this information would have initially influenced their enrollment in a particular FYE class. However, the differences in the academic performance between the two groups were accepted as convincing.

[11] For information about one such systematic approach, undertaken by SUNY at Stony Brook, see https://c2l.digication.com/stony_brook_university_project_eportoflio/Plan_1_Spring_2011

Undergraduate Research Programs

Meeting the needs of students and fostering their engagement is also a goal for programs for continuing students as seen from the next type of curricular intervention, undergraduate research programs. The roots for undergraduate research programs can be found in federal investments supporting research in higher education programs, in curricular innovations such as co-op programs, and in honors programs, independent studies, and curricular initiatives undertaken by postsecondary institutions. Currently the National Science Foundation awards grants to institutions to support Research Experiences for Undergraduates (REU), and the National Institutes for Health provides scholarships to undergraduates in order for them to conduct research. The U.S. Department of Education awards grants to institutions to provide research opportunities; it provides other assistance to disadvantaged and underrepresented undergraduates through the Ronald E. McNair Postbaccalaureate Achievement Program, established in 1986, with the aim of increasing the number of students who enroll and graduate from PhD programs.[12]

Massachusetts Institute of Technology (MIT) developed a model for undergraduate research that is followed by other institutions. Edwin Land, inventor of instant photography, funded the first Undergraduate Research Opportunities Program (UROP) at MIT in 1969. The major components of the model included (a) collaboration between undergraduates and faculty on a research project, (b) development of a research proposal and plan by the student, (c) student conduct of research and analysis, and (d) oral and written student presentation. By 1995, three fourths of MIT undergraduates participated in UROP (MIT Archives, Special Collections).

The importance of undergraduate research was further bolstered by ensuing publications such as the Boyer Commission report *Reinventing Undergraduate Education: A Blueprint for America's Research Universities*, which encouraged inquiry-based education and research as part of the student's early college experiences (Kenny, 1998), and analytical reports based on NSSE data that show that undergraduate research is a high-impact educational practice. Most recently the Association of American Colleges and Universities devoted the Spring 2010 issue of *Peer Review* to an examination of the practices and educational benefits of undergraduate research (Elrod, Weight, Levenson, Snow, Shokar, Kaul, Pratt, Baker, Keller, Lopatto, & Evans, 2010).

The main purpose of undergraduate research programs is to provide undergraduate students with an early experience in conducting research while being mentored by a faculty member; it is believed that such experiences will develop students' scientific knowledge, increase their creativity in solving problems, improve their oral and written communications skills, and increase the chances that they will attend graduate school. The Council on Undergraduate Research (CUR) defines undergraduate research as "an inquiry conducted by an

[12] More information about the McNair Program can be found at www2.ed.gov/programs/triomcnair/index.html

undergraduate student that makes an original intellectual or creative contribution to the discipline."[13]

Lopatto (2003) conducted faculty research to identify the essential features of undergraduate research programs. The findings indicated that these programs offer students opportunities to read scientific literature, to design a research project, to work independently and as part of a team, and to master research techniques, among other things.

From the point of view of students, undergraduate research programs provide numerous benefits. A multi-institutional survey of 1,135 students found that participating students gained an understanding of the research process, laboratory techniques, and scientific problems (Lopatto, 2003). SRI International conducted a national evaluation of undergraduate research opportunities involving 15,000 respondents using four web-based surveys. The SRI study found that undergraduate researchers reported increased understanding of how to conduct research, increased confidence in their research abilities, and increased expectations of obtaining a PhD (Russell, Hancock, &McCullough, 2007). Students who participate are more likely than nonparticipants to go on to graduate school and to become researchers (Schouwen, 1998; Alexander, Foertsch, Daffinrud, & Tapia, 2000; Ishiyama, 2001).

Though UROPs can be found in many institutions, the outcomes assessment of these programs varies considerably. At the basic level, frequency of student participation in these efforts is noted. At the next level, quality of effort is assessed and may be recognized through an awards program for best research effort, or as part of a grade for an independent study course. Students present their findings at a public forum either on campus or at a regional or national meeting. The University of Michigan offers an exemplar of best practice in the assessment of undergraduate research opportunity programs. It has engaged in a longitudinal assessment of the impact of the program on a variety of measures and uses a mixed methods approach including both quantitative and qualitative measures (further information on the University of Michigan's efforts can be accessed at http://www.lsa.umich.edu/urop/about/evaluation).
Other notable efforts examining undergraduate research include:

1. The Council on Undergraduate Research (CUR), which serves as a key resource in the publication of articles and research concerning undergraduate research.[14]
2. The Higher Education Research Institute at UCLA, which collaborates with NIH to examine predictors of successful undergraduate research experiences and outcomes. Using the HERI 2007-2008 Faculty Survey, they selected 4,765 Science, Technology, Engineering and Mathematics (STEM) faculty members from 193 institutions. Among their findings: Faculty most likely to work with students in undergraduate research had previously taught an honors course, taught

[13] In addition to the definition, CUR also provides a description of the benefits of undergraduate research on its website at www.cur.org/about_cur/fact_sheet/

[14] CUR was founded in 1978 and its members represent more than 900 colleges and universities. Its mission is to support and promote high-quality undergraduate student-faculty research and scholarship. For more information, go to www.cur.org/about_cur/

an interdisciplinary course, collaborated with the local community in research, advised student groups, received funding for research, and encouraged "habits of mind" in teaching (Eagan, Sharkness, Hurtado, Chang, & Mosqueda, 2010).
3. An excellent resource providing scores of scholarly papers on the efficacy, assessment, and innovation in undergraduate research is located at the University of Pittsburgh (http://cwt4.chem.pitt.edu/ugrad/reu/efficacy.htm).

More recently, the U.S. Department of Agriculture funded the Scholars Program, an innovative summer undergraduate research program at Virginia Tech that integrates peer mentoring, grantsmanship, a specialized summer course, and a multi-institutional symposium along with the undergraduate research experience. The development of the program suggests that institutional commitments were strong. The preceding summer, the provost funded a summer session grant to allow the program to run as a pilot. The USDA provided funding for two years, and subsequently the university used institutional funds to support students and faculty. Later, faculty wrote grants to fund student stipends and an Office of Undergraduate Research was established. The Scholars Program is notable in that it used a comprehensive array of activities to foster student skills needed to become effective researchers and presenters, and in that it used multiple forms of assessment including longitudinal assessment. Various technologies are taken advantage of in the program—for instance, "Friday blogs" were required to encourage students to reflect on their learning and experiences. Good, McIntyre, and Marchant (2013, March) provide documentation regarding the program's successes as well as its remaining challenges. One major challenge may be faculty reward systems that don't take into account all the additional work educators must perform as a result of participating in the program—these reward systems may not include credit for the extensive commitments required in order for faculty to provide the necessary mentoring and research experiences or the publications that result from working with students on research projects.

Undergraduate research programs are pervasive, and there appears to be no standard place for the administration and assessment of these within the institutional structures as Table 1 shows. By contrast, there appears to have been more thought given to the location of experiential learning programs as their developmental trajectory has been different.

Table 1. Undergraduate Research Programs

Institution	Carnegie Class	Program Name/URL/ Contact
Carnegie Mellon University	RU/VH	Office of Undergraduate Research. Director: Stephanie Wallach Extensive opportunities offered in a variety of disciplines. www.cmu.edu/uro/

Rice University	RU/VH	Office of Fellowships and Undergraduate Research Director: Kellie Sims Butler http://www.futureowls.rice.edu/futureowls/Undergraduate_Research1.asp?SnID=976620190
Denison University	BAC/ A&S	Associate Provost's Office Recognized for its undergraduate research programs, in which more than 100 students participate each summer. Rice extends opportunities to students at Kenyon College, as well. Kenyon also administers a variety of undergraduate research opportunities through the Office of the Provost. www.kenyon.edu
Arkansas State University	Master's L	In addition to providing travel funds for undergraduate research and an honors program, Arkansas is unique in that its higher education program provides the undergraduate research fellowships through the State of Arkansas. Students apply directly to the state for the fellowships. http://www.adhe.edu/divisions/financialaid/Pages/fa_surf.aspx
Prairie View A&M University	Master's L	Provides numerous undergraduate research programs that are diffused throughout the curriculum. Coordination of these happens in the departments. The link below gives one example of the opportunities provided. http://www.pvamu.edu/pages/3483.asp
Fort Hays State University	Master's L	Office of Scholarships and Sponsored Programs "Undergraduate Research Experience Program" Coordinator: Leslie Paige http://www.fhsu.edu/academic/gradschl/ure/about-ure/

Experiential Learning Programs

I hear and I forget. I see and I remember. I do and I understand.
—Confucius

The purpose of experiential learning is typically, as MIT puts it, to "expose students to different ways of thinking and solving problems, broaden their communications skills, and help them

develop a better sense of self" (https://due.mit.edu/experiential-learning/office-experiential-learning). These are key aspects of the successful student.

The idea that there should be an experiential component to learning is one that has existed for some time. These learning experiences can take place within the classroom, outside of the classroom, and/or in the community at large. Experiential learning opportunities exist within service learning programs, internships, practicums, co-op programs, learning communities, field experiences, student teaching, independent study, and clinical practice. These opportunities may be offered for academic credit or on a noncredit basis, for pay or on a volunteer basis, within the academic or student affairs division, to all students or to a select few, and for different lengths of time.

The National Society for Experiential Learning developed a set of best practices that can serve as both guidelines for both the development and the assessment of experiential learning programs. Planning and preparation for the experience on the part of all involved parties, setting goals and expected learning outcomes, developing purposeful learning activities and experiences, including time for reflection, monitoring and promoting continuous improvement, and establishing assessment and evaluation are key in the design of these programs; see http://www.nsee.org/standards-and-practice

Our focus will be on two types of experiential learning programs that have gained renewed attention since the early 1990s: service learning programs and learning communities. The Council for the Advancement of Standards in Higher Education (CAS) developed standards for service learning and defines it as "a form of experiential education in which students engage in activities that address human and community needs together with structured opportunities intentionally designed to promote student learning and development." CAS standards describe expectations for the assessment and evaluation of service learning programs, and while no specific methodologies are specified, a mixed-methods approach is endorsed.[15]

Service learning programs and opportunities vary considerably depending on the interests of all involved. One use of service learning is as a way to promote civic values. In this context, Hunter and Brisbin (2000) define it as "a form of experiential education that combines structured opportunities for learning academic skills, reflection on the normative dimensions of civic life, and experiential activity that addresses community needs or assists individuals, families, and communities in need." To assess their program, they developed a pretest/posttest panel study of students at three West Virginia institutions for two semesters to evaluate the effects of service learning on students' political attitudes. As one of the expected learning outcomes of this service learning project was the increase in students' political knowledge, the researchers used questions from an index of political knowledge proposed by Delli Carpini and Keeter (1993, 1198-99).

The second example of experiential learning is the learning community. A common definition is that provided by Gabelnick, MacGregor, Matthews, and Smith states:

> A learning community is any one of a variety of curricular structures that link together several existing courses—or actually restructure the curricular

[15] For example, see the CAS standards at http://www.cas.edu/index.php/standards/

> material entirely—so that students have opportunities for deeper understanding of and integration of the material they are learning, and more interaction with one another and their teachers as fellow participants in the learning enterprise. (1990, p. 19)

Online learning communities are another form of learning communities that involve shared creation and shared understandings (Yeh, 2010). They have been defined as:

> A common place where people learn through group activity to define problems affecting them, to decide upon a solution, and to act to achieve the solution. As they progress, they gain new knowledge and skills. All of these activities and interactions occur in an online environment. (Tu & Corry, 2002, Introduction section, p. 1)

While many learning-community definitions exist, manifest in most are the notions of shared purpose, constructivist learning, common location (whether in linked courses, online, or in a community), and the building of community. Brownell and Swaner (2009) observe that learning communities can take many forms, from the basic linked two-course model to residential or living-learning communities.

Purposes served by learning communities include helping students to transition to college, supporting students with special needs, helping students to acquire multicultural and global understanding, and introducing students to professional practice. The quality and enthusiasm of the faculty have been found to be important aspects for the success of these programs (Brownell & Swaner, 2009).

The most common assessment practices for learning communities include comparisons of GPAs, retention rates, enrollment patterns, and student task-based performance. Ke and Hoadley (2009) reviewed 42 studies of online learning communities and found that the assessment strategies could be categorized in the general approaches used by Oliver (2000) and Patton (1997)—namely summative, formative, participatory, and responsive (p. 492). Both quantitative and qualitative approaches are used. Qualitative examples include content analysis of student written reflections, ethnographic study of online communities (Wederif, 1998), focus groups, analytical frameworks for observations, and interpretive case studies (Jehangir, 2008).

An example of a quantitative approach is that used by Smith and Bath (2006), who assessed student learning outcomes using scales selected from the biennial University of Queensland Student Experience Survey (UQSES). The point of their study was to explore determinants of student success to include not only measures of teaching and program quality, but also measures of the social/collaborative aspect of learning communities. Communication, problem solving, and ethical and social sensitivity are seen as transferable or generic skills that are important for all graduates to acquire. Smith and Bath found that “generic skills are best developed in contexts of high interaction, collaboration with peers and faculty, and engagement in a community of learning” (p. 266). An important finding was that measures of teaching and

program quality, while still significant, do not account for as much of the variance in graduate outcomes as does the social, interactive, and collaborative character of the student experience of university life (p. 275). Their findings reflect the importance of student engagement. Starting in fall 2010, the UQSES was replaced by the Australasian Survey of Student Engagement (AUSSE),[16] which is modeled on NSSE and provides for comparisons at the institutional, cross-institutional, and cross-national levels (Australia, Canada, China, Japan, Korea, New Zealand, and the United States).

Many researchers, accrediting agencies, and state agencies advocate using a mixed-methods approach to obtain a fuller understanding the phenomena studied.

Case Study Example: Bowling Green State University[17]

Bowling Green State University is a Midwestern, public, residential, doctoral-intensive university. During the fall 2009 term, it enrolled 17,309 students, of which 14,319 were undergraduates. Of the undergraduates, 92% attended on a full-time basis. The study surveyed 10 undergraduate learning communities and first-year programs at Bowling Green. These included two residential learning communities, four nonresidential learning communities that are course-based, and four learning communities designed to meet the needs of unique populations. The study was guided by eight research questions, including:

- What significant differences exist in retention rates, grade point averages, and student credit hours earned for participants versus nonparticipants after sex, race, and high school grade point average are controlled for?
- What are the results of locally administered assessments of learning communities and first-year programs?

Generally, the results showed increased retention rates for students who participate in these programs when compared with the retention rates of nonparticipants. Also, particular types of programs seemed to serve the interests of particular students better than those of other students in other types of programs. Comparisons of results between participants and nonparticipants on the National Survey of Student Engagement (NSSE) and a university survey were also made and yielded important differences across the 10 programs. There were different patterns of engagement based on the type of program. The results of the locally administered assessments are continually used to make changes in the content and structure of the programs. Of note, one of the programs—the "Springboard Program," a first-year, peer-to-peer program (http://www.bgsu.edu/offices/registrar/cat02/Special/Special40.html)—maintains an extensive database of pre- and post- assessment information about its students and uses this information to provide feedback to program coaches and staff about best practices in helping students develop critical academic skills.

[16] In 2010, 53 institutions participated in AUSSE. For more information see, http://www.acer.edu.au/ausse/background

[17] Bill Knight provides this case study of 10 learning communities.

Classroom Response Systems ("Clickers")

In addition to experiential learning programs, "clickers" have grown in popularity among some sectors. This is another form of student engagement. While this classroom tool is a form of technology, it is discussed here because it can be used as a college intervention strategy and its effect on student success needs to be evaluated through assessing its outcomes.

Classroom response systems, also known as student response systems or more broadly as audience response technology (ART), are used by corporate trainers, K-12 educators, and college faculty members. Through a combination of hardware and software, these technologies allow faculty members to pose questions to the class and to receive student answers electronically. Answers are transmitted through handheld devices ("clickers") using infrared or wireless technologies; they arrive to the instructor's computer console, where they are instantly tabulated and projected onscreen in the form of charts and graphs for class use. Most often these technologies allow for multiple choice or true/false types of questions. A few also allow for short answers.

The purpose of ART in classrooms is to foster student engagement in learning. Most often they are used in large introductory courses in the sciences, mathematics, engineering, computer and information sciences, nursing, medical and health related fields, and business. Derek Bruff at the Center for Teaching at Vanderbilt University developed a useful bibliography that includes more than 270 articles on classroom response systems; see http://cft.vanderbilt.edu/docs/classroom-response-system-clickers.bibliography/

ART can be used to facilitate formative assessment of two types. First, by polling students on key concepts or asking questions with short answers, the instructor is immediately able to assess how many members of the class are grasping a key concept. Second, when used in conjunction with classroom assessment techniques to assess the instructor's clarity, delivery, or students' satisfaction with the pedagogy being used, ART can help the instructor better tailor instructional activities to meet the needs of the students.

Beuckman, Rebello, and Zollman (2006) compared the efficacy and assessed the impact on learning of two types of ARTs: one-way personal response systems (PRS) and wireless mobile technology using personal digital assistants (PDAs). Comparing course GPA means, the study showed that students in the course using PDAs performed significantly better. Conducting an analysis of variance (ANOVA), they also found that higher-performing students were more likely to use PDAs more frequently.

While many educators believe that positive benefits can be gained from the use of ART, the studies are somewhat mixed and suffer from significant limitations. To address some of these limitations, MacGeorge, Homan, and others (2008) conducted a multidimensional study. Using the ART-Questionnaire they collected data at three points in the semester from more than 800 undergraduates enrolled in large lecture classes in communications, natural resources, and organizational leadership and supervision. Among the findings: students found ART easy to use and enjoyable, and ART enhanced student learning and attendance in class, but there were

perceived differences in how ART contributed to student learning. These differences may be related to instructor's pedagogy and how ART is positioned within the course.

Discussion and Concluding Comments

Important points surfaced in examining the use of focused interventions. Through the WAC discussion and case study, one learns that assessment can be used to refocus organizational support for programs. The study also highlighted the distinction between direct and indirect methods of assessment. Gaining the support of faculty in such efforts and working across the university with other units such as the faculty development center are important. In examining transition programs, one learns that in addition to faculty interests and efforts, leadership is needed to support the programs and to develop initial funding. Additionally, multiple components of a program require different strategies for assessment of student outcomes. The evidence presented for undergraduate research programs focused on learning outcomes in STEM programs. However, colleges are increasingly providing support for creative activities and projects, as well. Undergraduate research programs require substantial resources and in some cases may take faculty away from their own research and publications for which faculty are rewarded. For these types of programs, leadership needs to make clear what resource commitments they are willing to make, what expectations they have of faculty in this type of work, and what types of work will be rewarded. In examining learning communities, Brownell and Swaner (2009) remind us of the importance of the "quality and enthusiasm of faculty" in assessing program impacts, while Smith and Bath (2006) note student engagement.

Clarifying purpose, goals, definitions, and assessment strategies is key, as is clarifying desired student outcomes. Useful questions to be discussed before embarking on the project are:

1. What are we trying to accomplish? What are the program goals, learning objectives, and expected outcomes? What is the value added to the student?
2. How will we accomplish this? What is the underlying theory, hypothesis, or construct for action? Is there a logic model? What is the theory of action that links the concepts?
3. What sets of activities, policies, procedures, technologies, and organizational structures need to be put in place or are used to accomplish the goals?
4. What research design will be used to assess the program? Which components of the program or intervention *are of priority* for assessment? Why?
5. What methodologies will be used? Who is responsible for implementing the assessment in a systematic way?
6. Who is responsible for reporting? How will information be shared with stakeholders?

One has the choice of quantitative methods, qualitative methods, or the use of mixed methods. It is clear from the literature on assessing program impact and the program examples cited here that most researchers will want to use a comprehensive approach using mixed

methods. Those assessing the impact of a particular curricular intervention would do well to assess at multiple points in time to be able to examine trends and increase the usefulness of the data. A summary of the approaches used in this chapter is shown in Table 2. Through a series of case studies, Howard (2007) and Schreiner (2009) provide additional examples to illuminate the significance and limitations of the various approaches. Researchers may wish to consider which of the various assessment approaches would have the most impact in answering questions about the effectiveness of the intervention, or which would provide the kinds of data that would most likely be used to improve the intervention.

Table 2. Methods, Data Types, and Documents Analyzed by Programs in This Chapter

Method	WAC	Transition	UG Research	Experiential	ART
Portfolios	X	X			
Content Analysis	X			X	
Satisfaction Surveys	X	X		X	
Rubrics	X	X			
Standardized Tests	X				
Capstone Projects		X			
Retention Rates		X		X	
Need Assessments		X			
Current Practices Inventory		X			
Grades, GPAs		X	X	X	X
Focus Groups		X		X	
Multi-institutional Surveys			X		
Frequency of Participation			X		
HERI Faculty Survey			X		

Assessing varied interventions with a mixed- methods approach is preferred. Assessing according to an assessment plan will enhance the assessment effort and also establish what is

possible within the constraints of budget, staffing, and institutional culture or context in which the intervention occurs.

Successful curricular innovations require leadership, resources, faculty, student and staff support, and an alignment with institutional mission and priorities. Organizational structures facilitate cross-functional efforts and coordination and promote enduring commitments. For example, the establishment of the FYE Office at Northeastern Illinois University and the Office for Undergraduate Research at Virginia Tech provide bases of operation that free faculty and staff to focus more on student teaching, research, and support. The use of instructional technologies and other technologies is increasingly common with curricular innovations and needs to be taken into account in planning interventions to improve student success. Ongoing assessment and evaluation in all of the cases presented was used to establish baselines, provide indicators of success, as well as to show ways for program improvements. Ongoing assessment supported the communication of program improvement across multiple college disciplines and cultures. Ongoing assessment enhances student success.

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Student Affairs Research and Assessment to Support Student Success

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Student success in college depends on curricular and co-curricular learning. Faculty members are responsible for curricular learning in general education and discipline-based subjects. Student affairs professionals are responsible for many of the co-curricular programs that foster learning outside of the classroom. To support student success student affairs functions should continuously assess the effectiveness of their programs and services.

The purpose of this chapter is to give context to the assessment movement in student affairs, describe the relationship between assessment and research as it relates to student affairs work, and provide examples of how assessment and research are separate yet intertwined and complementary. The second part of the chapter will address how data can be used to improve student affairs practice and inform organizational effectiveness, while giving suggestions how student affairs professionals can partner with other parts of their institutions to support assessment and research initiatives.

The Relationship of Assessment and Research

As student affairs has worked to improve its programs and activities much of the effort in research and assessment has been to improve the cocurricular learning of the students—in other words, to improve student success. The work in this second area has involved both learning outcomes assessment and research about the student experience. The following describes the background of assessment and looks at its relationship with research.

Assessment in Student Affairs

Student affairs professionals entered the assessment scene in the early to mid 1990s, at a time when the dimensions of assessment in student affairs included assessing student needs,

satisfaction, campus environments, student cultures, program and service outcomes, and organizational performance comparisons (Schuh & Upcraft, 1996). Toward the late ’90s Student Affairs Administrators in Higher Education (the national organization now referred to as NASPA) put forward a new statement to define good practice in the profession that defined student affairs professionals as educators responsible for engaging students in active learning (NASPA, n.d.). This new definition of good practice expanded the dimensions of student affairs assessment to include student learning.

Since the turn of the century, a series of foundational documents have been written to help guide assessment in student affairs. Publications such as *Learning Reconsidered* (Keeling, 2004) redefined learning as a holistic student experience and thus an institutional responsibility for which all areas were accountable, including student affairs. In 2006 the College Student Educators International (ACPA) organization published the *ASK standards,* designed to “articulate the areas of assessment skills and knowledge (ASK) needed by student affairs professionals in all functional areas” (ACPA, p. 1). In 2007, the Student Affairs Administrators in Higher Education (NASPA) organization published the *Assessment Education Framework* to provide student affairs professionals a curriculum structure for those interested in learning more about assessment (NASPA, 2009). In 2009, ACPA and NASPA created a joint task force to develop a set of professional competencies for the field of student affairs, including competencies in assessment, evaluation, and research.

During this same period, the Council for the Advancement of Standards (CAS) in Higher Education continued to revise outcomes for units within Student Affairs and published a book titled *Frameworks for Assessing Learning and Development Outcomes* (CAS, 2006). And while CAS promoted outcomes for specific units, *Learning Reconsidered II* (Keeling, 2006) was published to provide examples of how individual campuses successfully “developed and assessed student learning outcomes, found points of collaboration across campus or identified new ways to link their work to learning activities” (p. vii).

While there are many more publications addressing the various aspects of assessment in student affairs, the above works are examples of how national student affairs specific higher education organizations have raised expectations regarding assessment knowledge, skills, and activities in the profession. In regards to learning outcomes, student affairs divisions have looked to *Learning Reconsidered* (Keeling, 2004), *Frameworks for Assessing Learning and Development Outcomes* (CAS, 2006), and *College Learning for the New Global Century* (AAC&U, 2007), to assist in writing outcomes and assessing learning outside the classroom.

Despite the prevalence of the topic of assessment in the field, institutional commitment and approaches to assessment still vary greatly across the country. In 2007 the two leading student affairs organizations, the College Student Educators International (ACPA) and the Student Affairs Administrators in Higher Education (NASPA), attempted to identify student affairs assessment professionals and conducted a survey to better understand their roles, responsibilities, assessment practices, and location within their institution’s organizational structure (Henning & Ellington, 2009). Based on this survey data, profiles of student affairs

assessment professionals that emerged included an earned doctorate with six or more years working in higher education, three to ten years working in assessment, and less than five years in their current position. A majority of these professionals worked at public four-year institutions with more than 15,000 students, housed in a student affairs central office or student affairs assessment office, and were coordinating assessment across multiple departments in a division. (Henning & Ellington, 2009).

The organizational structures of student affairs divisions vary greatly across institutional type as well. Divisions may approach assessment from the departmental or divisional level. In some cases, the divisions may take a less structured approach and look to departments already engaged in assessment to encourage other departments to implement assessment. Other divisions may see the need for more structure but be unable to devote additional resources to the initiative, assigning one or two staff members to coordinate assessment in addition to their existing responsibilities. For those divisions with the resources to devote to assessment, a part-time coordinator may be hired to focus on assessment activities at the divisional level, or even a full-time coordinator, director, or assistant vice president to lead the divisional assessment initiative. Often these full-time positions report to a senior level student affairs officer. In many cases these areas are one- or two-person departments. There are, however, examples of institutions that have dedicated extensive staff support and resources for assessment and research. For example, student affairs assessment offices at both Texas A&M University and The Ohio State University have at least five full-time staff members dedicated to conducting research and assessment for their respective divisions.

For student affairs administrators, assessment is a matter of moving from something “we would like to do” to something that “needs to be done,” and is essentially premised in the idea that assessment should be conducted for accountability purposes. The contention of the authors of this chapter, however, is that assessment should be done with both accountability *and* improvement in mind. By keeping both of these reasons in focus, assessment moves from being merely reactionary (accountability only) to being intentional, designed to develop and deliver high quality programs and services that foster student learning and success.

Developing a comprehensive division-wide approach to assessment that is intentional and consistent with institutional strategy is a challenging task and involves measures to define student success metrics, program outcomes, and learning outcomes. Determining relevant metrics, such as graduation and retention rates for target populations, support service participation, and student engagement levels, helps provide information related to the division’s impact on student success. Defining program outcomes as well as specific program goals can provide information on the effectiveness of program and service delivery for program improvement purposes. It is the program outcomes that help determine how the department and division are achieving its mission and assigned responsibilities within the university. Defining student learning outcomes, on the other hand, help guide the work of the division and hold departments within the division accountable for delivering learning related to department, division, and university learning outcomes. It is the combination of these three measures—

student success metrics, program, and learning outcomes—that can assist a division in designing and delivering quality programs and services that are intentionally focused on mission, learning and student success.

Understanding the Difference Between Research and Assessment

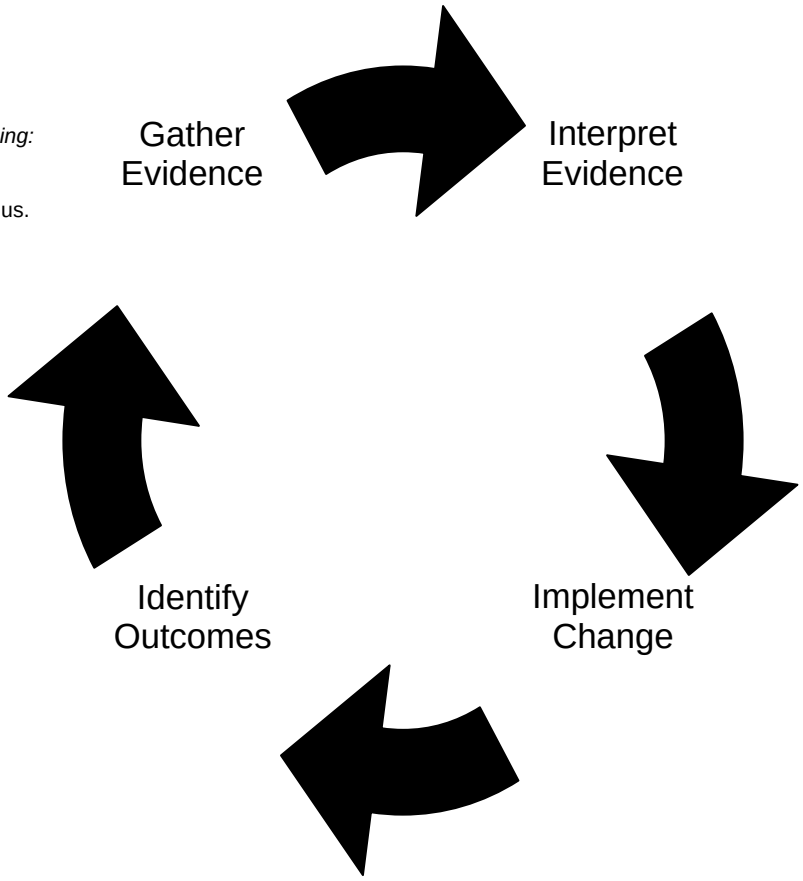
Although definitions of assessment exist in the literature, multiple definitions and misuse of terms has led to much confusion as to what the word "assessment" actually means in relation to student affairs (Schuh & Upcraft, 2001). Schuh and Upcraft (2001) define assessment as "any effort to gather, analyze, and interpret evidence which describes institutional, divisional, or agency effectiveness" (p. 4). Assessment can be for more than just the student population, and student affairs professionals might use assessment efforts to measure facility efficiency, satisfaction with services, or learning outcomes related to specific programs or initiatives.

Schuh and Upcraft reach a similar conclusion for the term "research." For student affairs professionals, "research" is something that faculty members in higher education and student affairs programs often pursue for publications. Recent moves to make research more applicable to practice have fostered an increase in the number of practitioners conducting research projects, either with or without faculty member involvement, though some, of course, hold dual roles.

Erwin (1991) distinguishes between research and assessment in two ways: 1) "assessment guides good practice, while research guides theory development and test concepts," and 2) "assessment typically has implications for a single institution, while research typically has broader implications for student affairs and higher education" (Schuh & Upcraft, 2001, p. 5). Though research is defined as exploring theories and testing concepts, research could also test the concept of "good practice" with which assessments purport to assist. Research, to us, should guide the formation of instruments and methods regarding assessment, so we can begin to match theory to practice. Using various models below, the authors will show the connection between research and assessment in student affairs practice.

The following model is adapted from Maki (2004) in her description of the assessment process. Maki suggests starting with the identification of outcomes. The process of gathering evidence occurs next, which could be in the form of various qualitative, quantitative, or mixed method procedures. After the evidence is gathered, the data is interpreted through analysis. Data analysis should be rigid and thorough when using more advanced procedures, but time constraints might limit the depth of the data analysis. In some cases, themes or descriptive statistics may suffice, though caution is recommended when drawing conclusions from this type of data analysis. Following data analysis, then, change is implemented into the organization. After this change is implemented, Maki's loop then suggests the organization identify outcomes again and start the process over, continuing the loop.

Figure 1. Assessment Loop



Adapted from Maki, P. L. (2004). *Assessing for Learning: Building a Sustainable Commitment Across the Institution.* Sterling, VA: Stylus.

For example, a college might be interested in reaching out to parents of students who use the student health center (outcome identified). As such, they create an instrument based off parent feedback they receive via email, and then pilot a survey (gather data). After the finalized version is administered and the data collected, the health center revises their website appropriately (change implementation) regarding the design and content on the parent section of the website (interpret evidence). The health center then collects data from the website regarding its new layout and solicits feedback through a weekly newsletter to parents. This data is used to determine whether or not the website is meeting parents' needs (identify outcomes), and the loop continues as feedback is solicited regarding the functionality of the new website design for the parent population.

A similar process could represent the way research works in student affairs, as represented below in Figure 2. This is a highly simplified representation of the research process. The research question is central to the study, and should be the focus of the study. From the research question, various methods are used to try and answer the focus of the study, whether qualitative, quantitative, or mixed methods. Next is the data analysis stage, in which one uses analyses to help answer the research question. Data analysis should be a function of the research question; there is no reason to use advanced statistical procedures or advanced qualitative theoretical frames if the use of these analyses will not help answer the question at hand. Finally,

the research loop “ends” by using the research findings, either in one’s own research practice, or by using studies that have previously been completed in concert with the current study, to forward recommendations for practice and/or further research. As time goes on, fresh research questions emerge from the literature and the loop begins anew.

Figure 2. Research Loop

For example, a career services center commits to addressing specific career-related needs that they believe counselors are meeting, but are not sure about student perceptions when compared to counselor perceptions (research question). To gather data, they create a survey based on these career-related needs, based on instruments or constructs in the research literature, and solicit students to take the survey immediately following appointments with career counselors. The counselors fill out a checklist of the career-related needs they felt were covered in the appointment, and then this checklist is compared to the career-related needs survey (intake and post-appointment survey). Significant differences are highlighted and covered in the next appointment with the student (interpret data/use research findings). Over time, counselors can identify whether specific career-related needs are being addressed via their training, or whether new career-related needs are emerging (new research questions).

Connecting Research and Assessment

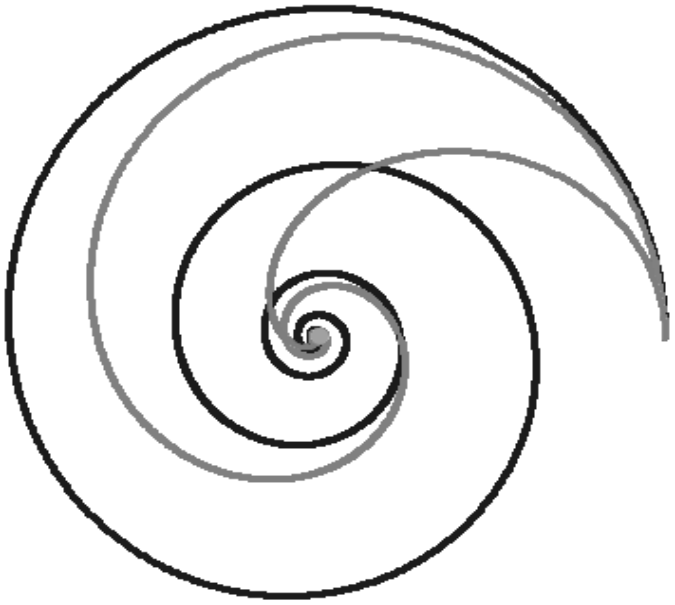
There are very real limitations to assessment in student affairs that practitioners must face daily. Some of these limitations include a lack of resources and external pressure to assess certain programs and services. Nevertheless, more and more institutions are dedicating resources to assessing student affairs initiatives to ensure student needs are being met across these services and that student learning is being accounted for. The lack of time to create or conduct assessments has led some institutions to outsource assessments to third-party organizations, or to create assessments that do not measure much beyond the satisfaction levels of students using the services. Though this time limitation is very real, we know from Astin (1991) that the correlation between student input data (i.e., high school grades, standardized test scores, and basic demographic data) and student satisfaction is very low (.20), which makes it difficult to draw causal conclusions between a service and the effects it has on students. Outsourcing assessments could lead to assessments that do not properly reflect the context of an institution's specific student affairs setting. For example, if an assessment were created pertaining to campus environment, specifically environment with regard to race on a historically Black campus, and the same assessment were administered at a predominately White institution, very different (and perhaps erroneous) conclusions about the environment on each campus could result. In this case, the assessment should be piloted at both institutions and compared with the context in mind, rather than merely used in both places. Using the same assessments on multiple campuses can collude the definitions of research and assessment explicated by Schuh and Upcraft (2001). This is where the importance of research, in conjunction with assessment, comes into the picture.

Historically, research and assessment seem to be in two different "silos," thought of as two distinct and sometimes opposing initiatives. Palomba and Banta (1999) argue that research should be a part of comprehensive assessment endeavors. Figure 3 posits a new way of thinking about this relationship. Since the assessment loop (Maki, 2004) and the research loop seem to follow similar logic, Figure 3 combines the research loop with the assessment loop. The key point, as explained below, is where the loops meet.

Assessment, over time, should lead to research questions. For instance, if one finds over and over that students are not achieving the desired outcomes of a particular service or program, why these students are not achieving said outcome should be asked. Once this question is researched, the findings forwarded, and changes implemented, the new assessment inquiry (or outcome) becomes focused upon assessing how well the implemented change works. The relationship between research and assessment is made clear by applying theory to practice.

Similarly, a research study could guide the assessment of a student affairs office. In the above example with the career center, the career-related needs, which are derived from research, that are measured are applied to measure whether students' needs are being met. If a particular career need is not being met, a research question might be raised about how counselors are teaching said career need. A new way of teaching could be implemented, then assessed to tie the research and assessment spiral together.

Figure 3. Research and Assessment Spiral



- **The *black curved line* = "Assessment Loop"**
- **The *gray curved line* = "Research Loop"**
- ***Note the areas where the arrows meet***
- **The *line* going to the center = research and assessment should always be tied back to Student Affairs department mission.**
- **The expanding circles represent our expanding knowledge**

The center of the circles represents the mission of the Student Affairs department mission, as well as how this ties to the division mission.

In Figure 3 above, the circular lines going to the center of the model represent the mission of a department within student affairs, and the mission of the overall student affairs division. The model shows that research and assessment should be tied back to the mission; each assessment topic or outcome and each research question should be informed by the mission of the organization. In the career services example, the research and assessment inquiry about career needs is tied to career service's mission, providing career-related needs services to students and could also apply to a division-wide goal of preparing students for their time beyond graduation.

One can find many resources with regard to conducting research and assessment. A number of national organizations related to student affairs, such as ACPA and NASPA, have special groups committed to assessment and research in higher education, as well as special conferences. Furthermore, a number of useful websites exist to help with research and assessment work. Multiple academic journals and publications geared toward higher education professionals also offer support, such as *About Campus*, which has an assessment section, the *Journal of College Student Development*, and the *Journal of Student Affairs Research and Practice*. There are also newsletters available from the previously mentioned organizations, as well the *Assessment Update* publication. Those who contribute to the field in innovative ways

should be encouraged to submit a publication to one of these mediums to help improve the higher education knowledge base.

In sum, then, research and assessment are not separate and disparate endeavors, but are related and complimentary. Assessment and research, when combined, have the potential to link years of research and inform practice directly. Findings in assessment could lead to new research directions, allowing student affairs services and programs to be more agile with emerging student populations.

Organizational Effectiveness: How Do We Use the Data?

After student affairs administrators realize a need to collect research and assessment data, another question emerges about how to use the data; namely, how to use data to inform program improvement. Some professionals may ask how to use data to align with institutional priorities while others may ask how to use data to demonstrate cocurricular impact on student learning. A growing number of student affairs practitioners are asking how to use data to tell their organization's story. All of these questions, however, just mean that student affairs professionals, like most higher education professionals, are asking the question: *How can data be used to demonstrate organizational effectiveness?*

As Huber stated,

> An organization learns if any of its units acquire knowledge that it recognizes as potentially useful to the organization. More organizational learning occurs when more of the organization's components obtain this knowledge and recognize it as potentially useful. (1991, p. 90)

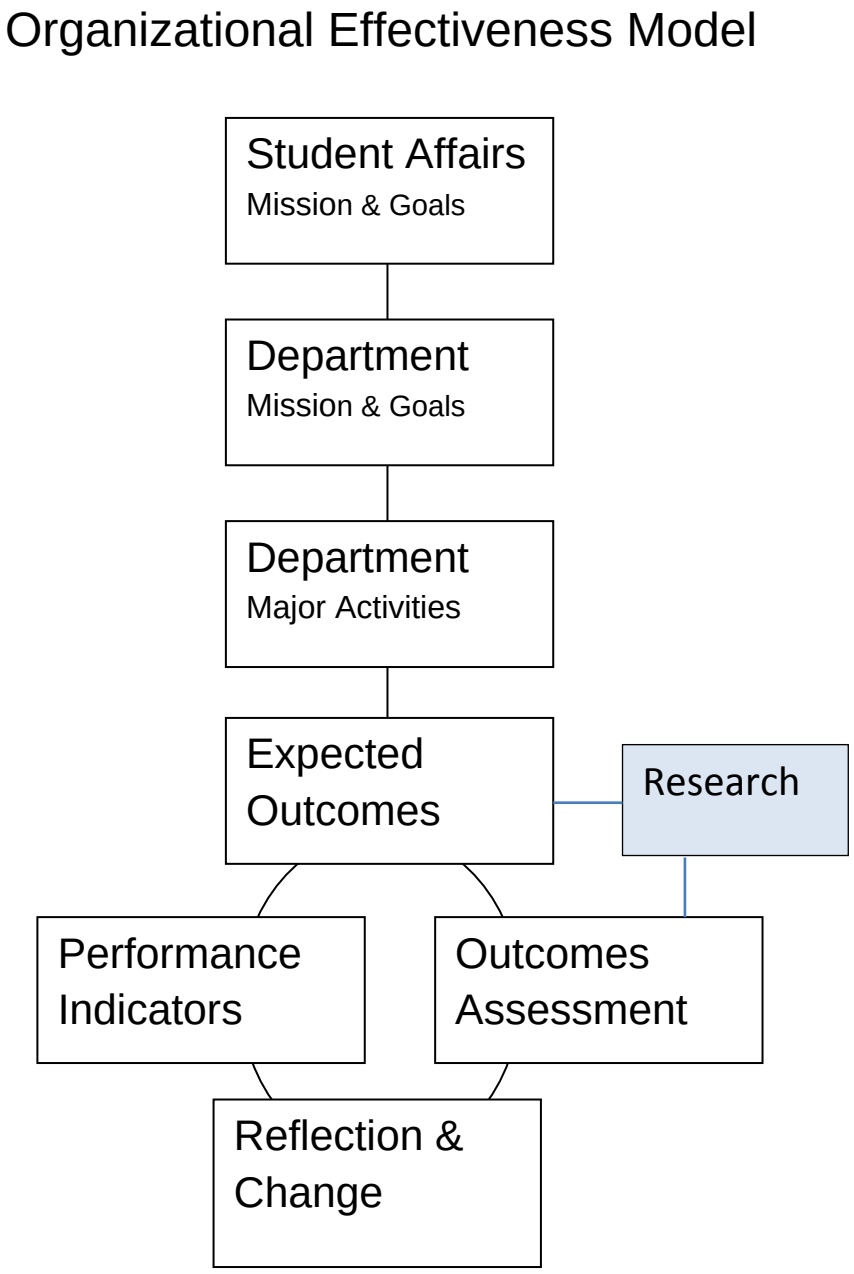
According to Berger and Milen, "organizational effectiveness is not an end in and of itself, but should be a means for helping a college or university function in a manner that promotes the development of positive educational outcomes for students" (2000, p. 268). We define an effective student affairs organization as one that is outcomes-focused, data-informed, reflective, and open to change.

An effective student affairs organization should be able to measure progress toward mission fulfillment and accomplishment of its strategic goals at all levels of the organization. The model used in Figure 4 is a cascading model advocated by Niven (2002) as an appropriate model for governmental and nonprofit organizations[1]. In this cascading model, the divisional mission and goals are established at the highest level of the organization. The goals of all support units within the organizational structure should align with the central mission and goals of the organization, but it is important to note that not all goals or activities will align perfectly with all of the divisional level goals. In our example, the data collection is centered at the department level with each department identifying its major activities, the expected outcomes of those activities, with the performance indicators and outcomes-based assessment used to provide

[1] Research is added based on the earlier discussion of integrating research and assessment.

evidence of progress toward meeting a particular outcome. In addition, the model is centered on the notion of reflection and intentional change. For an organization to be effective it must use data as a reflection tool that leads to intentional change and demonstrated progress toward mission fulfillment.

Figure 4.



Before continuing with the discussion of the learning outcome there needs to be a brief mention of the performance indicators. This part of the model recognizes that, in addition to

facilitating student learning, student affairs is also typically responsible for providing an extensive set of student services, from running the residence and dining halls to operating the wellness center and mail system, all of which need to operate successfully for students to be successful. The role of performance indicators is to monitor and measure the quality and quantity of these services.

The Ohio State University is a good example of the use of KPIs in student affairs. The goal of the division is articulated in its definition of student success:

"Student Success = Ohio University (students) and graduates are committed citizens with character who engage in civil discourse in order to build effective communities. They are globally aware critical thinkers and lifelong learners who achieve their personal goals." (slra.osu.edu/posts/documents/osu-strategic-planning-presentation-2012-combined.pdf)

The document also identifies how learning outcomes assessment and key performance indicators can be aligned with the division organizational structure in an intentional and strategic fashion.[2]

Returning to the consideration of assessing learning outcomes, the data collected through a sound assessment and research process is evidence. A robust body of evidence is necessary for an organization to grow and improve practice. For example, simply measuring occupancy in university housing does not give a true picture of the impact of the residential experience on student success. To gain a better understanding of the impact of services, the unit should develop a set of strong learning outcomes and conduct assessment geared toward those outcomes. The data from outcome-based assessments will inform practice in the unit and demonstrate the impact on positive education outcomes of the students they serve.

The ultimate purpose of assessment is to improve practice. Similar to Maki's assessment loop, Walvoord (2004) identifies the following three commonly accepted steps to assessment: 1) identify the desired outcome, 2) gather evidence, and 3) use information for improvement. With this in mind, research and assessment practitioners in academic affairs can play an important role assisting in the gathering of evidence with student affairs professionals. The data from an effective assessment can be used to support institutional scorecards, university-wide strategic indicators, and factbook sections geared toward the cocurricular activities of the students. For data to have an impact on improving practice they must be collected by following appropriate research methods. Even data used for action research purposes should follow the basic guidelines of data collection, be they quantitative, qualitative, or mixed method (each outlined in other sections of this volume). Poor data collection will lead to poorly informed decisions, which in turn can lead to misguided improvement of practice.

As discussed in other areas of this volume, student affairs professionals actively contribute to student learning. As institutions switch paradigms from a teacher-centered paradigm to a learner-centered paradigm, student affairs professionals will be active

[2] A more extensive discussion of KPIs for student affairs is beyond the scope of this chapter. If you are interested in more information, use of "key performance indicators" and student affairs will produce more than 6,000,000 hits on Google—many of these hits are the KPIs for specific institutions.

collaborators with other areas of their institutions to facilitate this shift. In many cases, student affairs professionals provide environments that facilitate students' construction of knowledge through application of lessons or content learned in the classroom, made possible through the diverse learning environments created by student affairs practitioners outside of the classroom. The ability to assess these environments both directly and indirectly is foundational to measuring student success and learning.

Evidence gathered through assessment should be used to help student affairs divisions align their initiatives and strategies with the goals and strategies of their institutions. Clearly articulated strategies, objectives, and initiatives are important to any organizational effectiveness process. Through the collection of assessment data, organizations will demonstrate progress toward fulfilling the strategies, objectives, and initiatives associated with the goals of the student affairs division and the institution. A strategy represents the broad priorities adopted by a student affairs division in recognition of its operating environment and in pursuit of its goals. An objective is a concise statement describing the specific tasks the organization must accomplish in order to execute its strategy. Initiatives are the specific programs, activities, projects, or actions an organization will undertake in an effort to meet performance targets. The data from an organizational effectiveness process will be centered on the initiatives, most commonly in the form of metrics, milestones, and resources. Data can be used to help an organization thoughtfully align its goals and initiatives.

Data should also be used to help an organization tell its story to constituencies both inside and outside of the organization. Student affairs organizations serve many audiences. Students, faculty, administrators, and parents all want to know how the organization is serving students and their particular needs. The use of data can help the organization identify goals targeted for particular audience members, identify actions they expect audience members to take as result of the message, and finally, assess the effectiveness of the messaging to the audience. When an organization is telling its story, it must use data to drive adjustment and reinforce key points.

The efficient use of data is the catalyst of success for an effective student affairs organization. Organizations use data to provide a foundation for telling their story, aligning with their institution's goals, and building a body of evidence that supports fulfillment of their missions. In addition, student affairs professionals should use assessment data to demonstrate how they contribute to student learning. Assuring the quality of data should be a priority for every organization and represents a prime opportunity for collaboration between the institutional research professional and the student affairs administrator.

Partnerships

All colleges and universities have an institutional capability to report student data to the federal government and typically to state government and numerous other entities. Typically institutions also use data to assess their efficiency and effectiveness for accrediting agencies and for internal management. This results in an institutional analytic capability either in one unit or distributed

between units. Just as with student affairs, how institutions organize these capabilities depends on factors such as size, location, and control. Often these functions have titles such as assessment, institutional effectiveness, institutional research, planning and analysis, or some combination of these terms. Also in some institutions this is part of the registrar or student records function. Regardless of where the institutional analytic function resides or what it is called, it is essential for student affairs assessment for research to partner with the function.

The assessment of curricular learning can inform and enhance the assessment of cocurricular learning. As previously discussed, student affairs professionals have developed a rich body of knowledge and methodologies to use in judging how their activities support student success and how they impact student outcomes. Curricular learning specialists have developed a similar set of methodologies and body of knowledge. The integration and synthesis of these bodies of expertise will be superior to either one alone, and their partnership will make the institution more coherent, helping students to see the institution as an integrated holistic experience.

Academic Affairs Partners

The relationship between student affairs and the institutional analytical assessment and research function is strong on most campuses. Student affairs assessment professionals have turned to research professionals for methods advice, while student affairs professionals can serve as content experts for student-related data. The reciprocal relationship between the two areas can strengthen the relationship between student affairs and academic affairs as they both strive toward student success. It is beneficial for academic affairs[3] to see the cocurricular side of data and help student affairs professionals understand the curricular context of student information and the student experience. This section will briefly explore those two concepts and how they ultimately strengthen the organizational culture within a university.

As we have discussed in this chapter, assessment and research in student affairs is striving to reach a level of rigor that would be acceptable at all levels of the institution. The institutional research professional has advanced training in data collection and analysis that could be of particular interest to student affairs professionals. Student affairs practitioners may be able to identify issues and discuss the implications of findings from assessment and research data, but the middle part of the research process is just as vital. As stated above, without good data the decision making process can be flawed. Institutional analytic staff professionals can play a significant role in helping to collect, analyze, and report data.

To facilitate the relationship between analytical research and assessment, professionals from academic affairs can establish professional contact with student affairs professionals in various ways. If there is an assessment committee within the student affairs division, academic

[3] In fact in some institutions, student affairs reports to academic affairs. In this discussion, academic affairs is referring to the curricula/discipline part of the institution that is focused on managing the faculty and the academic programs.

affairs staff can volunteer to serve on the committee as an ex officio member. Many of these committees serve as the coordinating body within a division, especially if there is no designated assessment and research professional. If there is a designated director of student affairs assessment and research, another suggestion is to meet regularly with this person, as a close working relationship with these individuals is imperative if collaboration between student affairs and academic affairs is going to be successful.

Importantly, student affairs professionals can be valuable consultants to research and assessment and research offices for academic affairs with regard to the interpretation and discussion of research and assessment findings. Many institutions have an office outside of student affairs responsible for coordinating student satisfaction surveys or nationally administered instruments such as the National Study of Student Engagement. The analysis of these data presents an opportunity to include colleagues from student affairs in the interpretation of results. Cocurricular experiences are vital to student success, and student affairs professionals spend the most time with students outside of the classroom. Understanding data about these experiences is critical to a research professional who is often tasked with developing reports around survey data. Research and assessment professionals are in a unique position to include student affairs professionals in the planning and development of management information. Reaching out to student affairs professionals taps a set of content knowledge and ability that often escapes research and assessment professionals in their professional training.

Regional accreditation is another opportunity for the partnership between student affairs and research and assessment to flourish. Research and assessment professionals usually have an active role in developing the data and gathering the evidence used during the accreditation process. Establishing a strong working relationship between student affairs and these professionals will result in more ready access to data that reside beyond their institutions enterprise system. Cocurricular data collected using proper procedures discussed earlier in this chapter will help develop a body of evidence regarding how the institution is fulfilling its mission both inside and outside of the classroom.

The relationship between academic affairs and student affairs can be mutually beneficial (Schuh & Gansemer-Topf, 2010). According to Hanson and Dynseni (2000) student affairs research is centered on four key areas: “Who are today’s college students? How do they experience? What do students learn in college, and who do they become? How does college affect what students learn and who they become?” (p. 6). Research and assessment professionals can play a positive role in facilitating a strong working relationship with student affairs professionals.

Faculty Partners

An additional partnership that student affairs professionals in research and assessment need to be open to and encourage is partnership with faculty. This is particularly true in colleges and universities that have a discipline component like higher education/higher education

administration, adult and continuing education and teaching, college student counseling and personnel services, and community college education.

In addition, numerous other disciplines are related to many of the activities found in student affairs. Student affairs facilitates real-world experiences for students. It also promotes faculty research projects. Data from student affairs programs can be used by faculty to test theories and conceptual models. The use of these data often involves the Institutional Review Board, a university committee set up under the authority of the U.S. Department of Health & Human Services to protect the physical and psychological health of human subjects (http://www.hhs.gov/ohrp/policy/conditionalapproval2010.html).

Faculty bring several important resources to the partnership with students affairs. First, they are strong methodologists in their discipline. They also have knowledge of their discipline areas; that knowledge helps them identify alternatives and interpret outcomes in the context of those fields and prevents thinking from being restricted to the level of the institution. Finally, they may help with the time and effort required to do research and assessment.

Summary

Student affairs professionals need sound data that will guide them toward understanding the student experience and how they can impact student learning and success. Data must be collected in ways that can bear scrutiny within the university. This chapter examined the history of research and assessment in the student affairs field and the important connections between research and assessment. While research and assessment are at times viewed as separate concepts, we argue that the two concepts complement each other, particularly in student affairs organizations that depend on research and assessment. Organizational learning is the process by which practitioners use data collected at all levels of the organization for growth and improvement, a concept we refer to as organizational effectiveness. Finally, a strong, mutually beneficial relationship should be cultivated between the analytic assessment and research offices in academic affairs and student affairs divisions.

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Successful Development of Socially Responsible Citizens

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The Association of American Colleges and Universities (2008a) in one of its signature programs, Core Commitments: Educating Students for Personal and Social Responsibility, identifies five dimensions of personal and social responsibility particularly important in the development of college students: (a) striving for excellence, (b) cultivating personal and academic integrity, (c) contributing to a larger community, (d) taking seriously the perspectives of others, and (e) developing competence in ethical and moral reasoning and action. This chapter concentrates on the civic engagement (contributing to a larger community) and ethical/moral aspects of social responsibility and its relation to student success. The chapter begins with a discussion of the mission of higher education and cites three examples of institutions where the campus culture is one of service and social responsibility. The second part of this chapter discusses the theoretical underpinnings related to civic engagement and social responsibility. The third part connects service and social responsibility to student success. The last portion of the chapter describes three models of leadership useful for developing social responsibility in college students and how these and other models have been used in assessing social responsibility and related values.

Mission of Higher Education

Educating students for personal and social responsibility is routinely cited as a purpose of higher education (Astin, 1997; Meacham & Gaff, 2006). Institutional mission statements commonly espouse this task as central to educating students and a core reason for the institution's existence (Colby, Erlich, Beaumont, & Stephens, 2003; Ehrlich, 2000; Meacham & Gaff, 2006).

Since the founding of Harvard University in 1636, institutions of higher education in the United States have touted their commitment to developing citizens (Bok 2006; Colby et al., 2003; Marsden, 1994) and embraced the need to cultivate both knowledge and values to support the democracy. By establishing institutions of higher education, the early colonists sought to train civic leaders with the requisite knowledge to lead, the ethical capacity to make decisions, and the ability to act for the common good for generations to come (Rudolph, 1990).

Mission Statements

In the early to middle of the 19th century, colleges focused on sharpening the intellect and honing the character of students as the dual missions of higher education. Early educators accomplished these aims through demanding excellence both in academic endeavors and in student life beyond the classroom (Bok, 2006). With a shift toward disciplinary specialization in the 19th century, the academic major became the focal point of undergraduate education (Association of American Colleges and Universities, 2007; Schneider, 2005). As research and knowledge in individual disciplines became more specialized, time constraints on both students and faculty diminished the time for reflection about philosophically important life questions (Nadelson, 2006). The public purposes of higher education were no longer foremost on the educational agenda of colleges and universities as the purpose of higher education shifted from developing good citizens to preparing graduates for careers (Nadelson, 2006; Schneider, 2005). This disciplinary individualism can be counterproductive to efforts to renew the civic mission of higher education (Schneider, 2005).

Meacham and Gaff (2006) studied the mission statements of 312 institutions listed in the Princeton Review's *The Best 331 Colleges*. The research, however, did not reveal a consensus of what the learning goals for higher education should be among this national sample of institutions. The researchers found that less than half of the institutions (39%) cited contributing to the community as an educational goal, while social responsibility and engaged, responsible citizenship in a democratic society were cited in only 28.5% and 17% of the mission statements, respectively.

Students are more likely to be successful in any endeavor when the institutional mission is clearly focused, the commitment to the mission is strong, and the guiding philosophy is evident (Kuh, Kinzie, Schuh, & Whitt, 2005). This principle holds true for developing civic engagement among undergraduates, as well. When an institution is focused on and committed to civic learning and to developing citizens, undergraduates are more likely to adopt behaviors that will propel them into a life of engaged citizenship during and beyond their undergraduate experiences (Association of American Colleges and Universities, 2009; Colby et al., 2003; Hoy & Meisel, 2009; Kuh et al., 2005).

Similarly, undergraduate civic engagement increases when civic learning takes center stage and provides the reason and rationale for both curricular and co-curricular programming (Colby et al., 2003; Hoy & Meisel, 2009). At institutions that give more than an obligatory nod to civic mission, students integrate civic behaviors into their lives (Colby et al., 2003; Hoy & Meisel, 2009). Institutions with a campus culture of service as their "lived philosophy" (Kuh et al., 2005, p. 27) create environments in which civic engagement is the norm for members of the campus community.

Three Examples

In our experiences in higher education, we have been part of several institutions in which the campus culture is one of service and social responsibility. We offer the following three examples: Berry College, the University of North Georgia, and Dallas Baptist University.

Berry College, a small, private, liberal arts institution in Georgia, states in its mission that "[T]he college furthers our students' intellectual, moral and spiritual growth; proffers lessons that are gained from worthwhile work done well; and challenges them to devote their learning to community and civic betterment" (Berry College, 2013a). At new-student orientation, incoming first-year students are introduced to the institution's motto: "Not to be ministered unto, but to minister" (Berry College, 2013b). First-year students all participate in service in the local community within the first weeks of arriving on campus. Students on campus have condensed the mission statement into "education of the head, the heart, and the hands" and can easily recite this version of the "lived philosophy." Even the student-athlete culture is part of the culture of service. Student athletes routinely donate their time to read to at-risk children or to spearhead food and clothing drives. The service culture extends all the way to commencement: In 2007 Berry's president added one simple but profound word—"obligations"—to the usual graduation pronouncement. Since that time, the president confers upon graduates "all the rights, privileges, and obligations appertaining thereto" (Briggs, 2008). It is quite clear that the graduates of Berry College are educated in order to serve in their communities and are obligated to do so because of the privilege of the education they have received (Briggs, 2008).

At the University of North Georgia, one of six senior military colleges, the culture of service and socially responsible leadership is first noticed in the institution's rich military tradition. Students are constantly reminded that they are part of something greater than themselves through observing campus traditions such as the daily retreat ceremony or by the noticeable presence of uniforms on campus. Service to one's community, whether local, national, or global, is not only part of the military program but is also seen in the curriculum as a growing number of faculty have integrated service learning into their courses. North Georgia earned the Community Engagement Classification in 2011 from the Carnegie Foundation for the Advancement of Teaching in recognition of its collaboration with the region for the mutually beneficial exchange of knowledge and resources.

The mission statement of Dallas Baptist University (DBU) states that the university's purpose is to "provide Christ-centered quality higher education in the arts, sciences, and professional studies at both the undergraduate and graduate levels to traditional age and adult students in order to produce servant leaders who have the ability to integrate faith and learning through their respective callings" (Dallas Baptist University, n.d.). A bronze of Jesus washing the feet of one of his disciples, located outside in a prominent place on campus, is a visible reminder of the "servant leadership" aspect of the mission. Students, faculty, and staff at DBU demonstrate that servant leadership is a "living mission and a lived educational philosophy" (Kuh, Kinzie, Schuh, & Whitt, 2005) through commitment to volunteer service (incoming

freshmen participate in six hours per month during their first semester), ministry to orphanages around the world (e.g., in Peru, Guatemala, and Russia), and participation in building projects for single mothers and disadvantaged families. Dallas Baptist University was named to the 2013 U.S. President's Community Service Honor Roll for the seventh consecutive year, and for the fourth time with distinction, in recognition of efforts to foster service learning and global civic responsibility (Dallas Baptist University, 2010, 2013).

Civic Engagement and Social Responsibility

Teaching students to be civically engaged is multidisciplinary in its theoretical underpinnings. Theorists from education, political science, college student development, and moral and spiritual development have contributed to understanding the role that higher education can and should play in teaching students to become civically engaged.

The Purpose of Higher Education: A History

Founders and political philosophers Thomas Jefferson and Benjamin Franklin were adamant that having an educated citizenry was vital for the United States not only to prosper, but to survive (Harkavay & Hartley, 2008; Lawry, Laurison, & VanAntwerpen, 2006). The education they envisioned would promote citizenship, democracy, and liberty. Such an education would deliberately address serving the common good and would thereby undergird the democracy by continuing to cultivate competent and moral leaders (Lawry, Laurison, & VanAntwerpen, 2006; Rudolph, 1990). Gutmann (1987) reiterates the founders' notion that education is essential to the health of democracy.

Barber (1992) summarizes succinctly the purpose of education in a democracy when he states, "There is only one road to democracy: education. And in a democracy, there is only one essential task for the educator: teaching liberty" (Barber, 1992, p. 15). In *Democracy and Education*, John Dewey (1916a/1944) describes the crucial role of education in creating, supporting, and sustaining a thriving democracy. The relationship between democracy and education is both symbiotic and dynamic. Like any vital relationship, it must be nurtured and attended to, with each party recognizing and valuing the interests of the other as fundamental to the well-being of both (Dewey, 1916a/1944; Gutmann, 1987).

Dewey looked beyond democracy as merely a form of government, but viewed it as "a mode of associated living" (Dewey, 1916a/1944, p. 87). The way of life that citizens of the United States have come to enjoy is contingent upon all stakeholders contributing. Giving way to the needs of others, in most cases, is not a natural course of action and, therefore, keeps the practice of democracy in tension with individual desires. Education is the means by which culture is transmitted to the inexperienced members of society and is the avenue through which students learn their responsibilities to the greater whole (Dewey, 1916a/1944). The natural tension that exists between individual and society is balanced by the educational process as the

educated individual comes to understand his or her obligation and role in society (Dewey, 1916a/1944). Dewey, realizing the difficulty of this tension, proclaimed that "Democracy must be born anew with each generation, and education is its midwife" (1916b/1993, p. 122). Each fall as new students arrive on college and university campuses, the process of teaching them their responsibilities as citizens of the campus and of the larger community begins anew.

In examining the type of practices most likely to support education for civic responsibility and engagement, Dewey (1916a/1944, 1916b/1993, 1938) was a proponent of an education that was practical and problem-based rather than one existing in disciplinary isolation. He saw the role of experience as crucial to education. Dewey (1938) also held that education should encourage students to interact with the community, for they would not learn to be citizens if they were isolated from the social problems of community association. Dewey (1938, pp. 47-49) held that experience was not simply preparation for the way life would someday be, but that it was the practice of life while also practicing *for* life. Essentially, he believed that one cannot wait to start one's life until after obtaining sufficient education or experience. Life is already under way, with each experience providing an opportunity to learn. Similarly to Dewey, Kolb (1984) asserts that the role of experience in learning is not simply as an enhancement, but is essential to the process. Kolb's (1984) theory posits that learning is a cyclical process in which knowledge and experience are interrelated. The learning process follows a pattern of experience, reflection, conceptualization, and, finally, experimentation.

A Framework for Civic Engagement and Social Responsibility

College student development theories offer a framework that supports the appropriateness of teaching students to become civically engaged during undergraduate education as they ask themselves significant life questions regarding who they are and what role they play in the larger society. As Colby et al. (2003) state so emphatically, moral and civic responsibility cannot be extricated from each other, and therefore, moral development theory serves to support the understanding of how one develops a sense of civic responsibility, a precursor to civic engagement. Many student development theorists' work is applicable to this discussion. These studies address not only intellectual and social thought, but moral thought and the capacity to act, which are crucial as students develop a changing understanding of self in relation to others. Perry (1999), Chickering (1972), Kohlberg (1981), and King and Kitchener (1994) are solid examples of developmental theorists who support civic learning in undergraduate education through examining the relationship of self to society. The key elements of their developmental theories are summarized in Tables 1 and 2 in the appendix.

According to Perry (1999), college students progress along nine stages on a developmental continuum during the undergraduate years and are challenged to think and act on an increasing understanding of self in relation to others. Perry (1999) describes the developmental process that makes the undergraduate years an opportune time for infusing education for citizenship into the educational experience as undergraduates examine issues of

ethics and their place in society. The exploration of self in relation to others is a recurrent theme in student development theoretical perspectives.

Chickering (1972) addresses the development of college students in terms of movement along seven vectors, three of which are intimately tied to the readiness of a student to become civically engaged: developing autonomy, developing purpose, and developing integrity. In the process of developing autonomy, a student becomes aware of his or her interconnectedness with others, and that recognition of interdependence with others is necessary as one considers place within community. Developing purpose describes the process by which a student embraces a plan that includes vocational and educational goals, as well as avocational plans and the style of life desired. The development of integrity involves defining one's set of beliefs and values and understanding of how these beliefs and values guide actions and behavior each day (Chickering, 1972). Chickering's work fits well with Perry's (1999) scheme.

Kohlberg (1981) approaches moral development as a sequential set of stages, as well. He discusses how students think about moral decisions and obligations. He is not as concerned about the content of those decisions, but instead focuses on the process through which students develop an understanding of universal moral principles. In this model, students move from an egocentric perspective and an adversarial relationship with rules and those who enforce them in the early stages to a commitment to a greater good as embodied in universal principles in the later stages. In reaction to Kohlberg's (1981) work, which focused on white males and tended to show females as deficient in moral reasoning when compared to males of the same age, Gilligan (1993) researched the psychological development of women, including their conceptualization of morality and view of self in relation to others.

Similarly to Perry (1999) and Kohlberg (1981), King and Kitchener (1994) describe the process by which students reason and develop a rationale for making moral and ethical decisions. They also use sequential stages as the descriptive framework. King and Kitchener's (1994) Reflective Judgment Model offers a new twist on Perry's (1999) conceptualization of ethical judgment.

Musil (2009) describes a theory of civic development called the Civic Learning Spiral. The theory posits that civic learning has six independent yet intertwining strands. These strands include self, communities and cultures, knowledge, skills, values, and public action (Leskes & Miller, 2006; Musil, 2009). "These six braids coexist simultaneously, indicating the connections between and among them, even if a given educational environment is designed to develop one element more than another (pg 60, Musil, 2009)." Some colleges and universities emphasize different strands.

Civic engagement also has a spiritual dimension for some. Feeding the hungry, caring for the impoverished, and working for social justice for the marginalized can be rooted in a set of spiritual or religious beliefs. Fowler (1981) posits a theory of faith development that—like other developmental theories—finds the early adulthood as a time to reflect on significant questions and develop a worldview.

Readiness for civic engagement is linked to a variety of types of theory. Like many other developmental tasks, civic learning must occur at a point in development when the student is beginning to understand the relationship of self to society. At this point, the concept of the greater good should also have meaning, even though it might not be fully understood yet. Developmental readiness, individual opportunities for increased freedom and responsibility, and institutional programs to further civic engagement converge during the undergraduate experience, offering a fertile environment in which to increase civic learning and engagement among students.

Connecting Civic Engagement and Social Responsibility to Student Success[1]

The preceding sections have viewed civic engagement and social responsibility primarily from the viewpoint of the institution. It is also important to view these aspects of community life from the perspective of what society expects the student to learn about them. This perspective also includes how institutions can enhance students' capabilities for civic engagement and social responsibility, and what evidence there is that these aspects enhance student success.[2]

Higher Education: The New Reality

American higher education is under significant scrutiny and sharp criticism in its quest to meet its own goals and fulfill the changing needs of the American public in a global society (U.S. Department of Education, 2006; Bok, 2006). The public has pummeled higher education and its leaders for their arrogance, inadequacies, and inefficiencies during the dawn of the new millennium (U.S. Department of Education, 2006). Employers indicate that graduates need different skills than those being learned during the undergraduate experience and complain loudly that higher education is unresponsive to their concerns (Association of American Colleges and Universities, 2008b). Increasing numbers of students are entering colleges and universities with less than adequate preparation for the academic and social tasks they are required to perform (Astin, 2000). Additionally, the demand for greater accountability for educating students to confront critical issues at the local and global levels, even in the face of decreasing resources, challenges even the most influential and able leaders in higher education (AAC&U, 2007; U.S. Department of Education, 2006).

Even from within the higher education community there is sharp criticism. According to Derek Bok (2006), president emeritus of Harvard University, colleges and universities are falling

[1] For more information on this topic, see *How College Affects Students*, Pascarella and Terenzini (1991, 2005).

[2] The authors offer the efforts of Berry College and 4-H clubs as examples of culture shaping the mission of colleges, and thus their definition of student success, as well as of culture shaping the mission and interpretation of participant success among other organizations. Berry was founded in 1902 in rural Georgia as the Boys Industrial School and subsequently evolved into a two- and four-year college. Since its inception, Berry has emphasized "education of the head, the heart, and the hands." 4-H clubs (representing "head," "heart," "hands," and "health") also have roots in rural America in the early 1900s. The 4-H slogan "learning by doing" mirrors Berry's philosophy toward student work.

short of their responsibility to their students and to society. He asserts that higher education should be making advancements rather than barely maintaining the status quo. This indictment against higher education is not new and has been a recurring theme as institutions have struggled for more than two centuries to provide education that serves both the individual and society.

Colleges and universities appear to be taking these concerns seriously. A renewed interest in the civic mission of higher education (Association of American Colleges and Universities, 2008a, 2008b, Boyte & Hollander, 1998; Colby et al., 2003) has occurred at the same time that the United States has witnessed a decline in civic participation (Putnam, 2000) and, specifically, a decline in community service engagement during and after college attendance (Vogelgesang & Astin, 2005; Astin & Vogelgesang, 2006). This vision of civic and community involvement being part of educational purpose is echoed in the growing popularity and influence of organizations and campus centers devoted to student civic engagement.

Colby, Erlich, Beaumont, and Stephens (2003) researched efforts to teach civic engagement on campuses and describe practices and conditions that advance the efforts. They provide solid examples of programs and practices at public and private institutions of all sizes (Colby et al., 2003). Later, Colby, Beaumont, Erlich, and Cornwald (2007) narrowed the focus from civic engagement to preparing students for political engagement, again providing examples of programs and practices that are promising.

The Engaged Organization

Higher education associations have responded to evidence and pronouncements of declining civic engagement not only by encouraging institutions to attend to discipline-specific knowledge but also by advocating that institutions embrace student learning outcomes that address non-discipline-specific behaviors and attitudes, such as social responsibility, ethical decision making, and critical thinking (Association of American Colleges and Universities, 2007; Keeling, 2004). The Association of American Colleges and Universities (AAC&U) is active in revitalizing the concept and practice of liberal education and calls for a new perspective for liberal education (Association of American Colleges and Universities, 2007). This reinvigorated approach is an educational triumvirate embracing (a) discipline-based knowledge; (b) practical and transferable intellectual skills such as oral and written communication and quantitative literacy; and (c) behaviors and attitudes such as civic engagement, ethical reasoning, and a proclivity toward life-long learning (Association of American Colleges and Universities, 2007). The AAC&U advances preparing engaged citizens through the agenda of liberal education. The knowledge, skills, and abilities, which are fundamental to liberal education, are also crucial in democratic society.

The Association of American Colleges and Universities (2008a) created the Core Commitments initiative, a leadership consortium of 23 institutions committed to fostering social and personal responsibility in their students and providing leadership to guide other institutions to do the same. This initiative demonstrates how the AAC&U has more broadly defined liberal

education and articulated its relationship to practicing democracy: “AAC&U sees liberal education as a philosophy of education that empowers individuals with broad knowledge and transferable skills, and a strong sense of value, ethics, and civic engagement” (http://www.aacu.org/resources/liberaleducation/index.cfm). The first report of the Core Commitments initiative revealed a gap between perceived real and perceived ideal efforts to educate for personal and social responsibility (Dey, 2009). Findings from the Core Commitments Research and Educational Change Collaborative, a group of nationally recognized scholars in the area of personal and social responsibility of college students, indicate that educational practices related to diversity and perspective taking, service learning and volunteering, and other engaged learning practices, particularly interdisciplinary coursework, contribute to the development of learning outcomes associated with social responsibility (O’Neill, 2012). In short, they contribute to student success.

Campus Compact, founded in 1985, advocates for learning through service and beyond the traditional classroom. Its mission is to advance “the public purposes of colleges and universities by deepening their ability to improve community life and to educate students for civic and social responsibility” (Campus Compact, 2013). The organization has grown from the initial commitment of three college presidents to almost 1,200 member campuses (Campus Compact, 2013; Harkavay & Hartley, 2008). Through service, students learn and practice the habits necessary for sustaining democracy (Harkavay & Hartley, 2008).

Engagement-Based Learning

Not quite twenty years ago, Jacoby and Associates (1996) identified service learning as a means of focusing on learning; they reported that it was one of the newer expected offerings of institutions of higher education. In their epic qualitative study a decade later, Kuh et al. (2005) identified a critical focus on student learning as one of six institutional conditions promoting student success. They reported engaging pedagogies such as service, service learning, and community-based projects as part of an institution’s commitment to an “unshakeable focus on student learning.” Furthermore, they noted that in institutions where learning is the focus, there are structures and rewards that support a culture of service and civic engagement. Service experiences provide students with opportunities to make meaning of their education, particularly when those experiences are intentionally connected to academic concepts. This shift from simple service to service learning deepens the student experience (Jacoby, 1996). For example, a student who encounters the faces of hunger on a regular basis while serving at the local food pantry and is also examining reasons for food insecurity in a class is more likely to be engaged than a student who simply participates in a canned food drive. Although both forms of service have merit, the former has greater potential for instilling in the student lasting engagement with the issue of hunger and with the institution that helped to connect education to a real-world issue.

Affiliation with Greek-letter social organizations is often associated with wider campus involvement and retention. Social fraternities and sororities frequently declare service to others

as part of their mission and work to increase leadership skills. In a study of 24 colleges and universities of varying types and sizes, Martin, Hevel, and Pascarella (2012) posed the question of whether fraternity and sorority affiliation enhances socially responsible leadership among first-year students. The results of this study indicate a positive significant difference in socially responsible leadership between Greek-affiliated and non-Greek-affiliated first-year students along three of eight subscales of the Socially Responsible Leadership Scale. Fraternity affiliation, in comparison to non-affiliation, made a definitive difference for men on both the citizenship and adaptation-to- change subscales. Sorority membership gave women significant advantage over non-affiliated women on both the common purpose and citizenship subscales. These findings suggest that membership in fraternities and sororities has a positive impact on socially responsible leadership among students and can provide one avenue for connecting students to meaningful and sustained service. The study also acknowledges that there is room for improvement in fostering socially responsible leadership among Greek-affiliated students, given that the findings show differences between them and their non-affiliated peers along only two subscales for each sex (Martin, Hevel, & Pascarella, 2012).

Associated Characteristics and Traits

A number of character traits (e.g., purposefulness, self-reflection, social awareness, integrity, respect, compassion) and their underlying values are associated with social responsibility, and are important because they "reflect the most basic philosophical underpinnings of humanity" (Association of American Colleges & Universities, n.d.), which leads one to surmise that social responsibility may have a link to spirituality. Astin, Astin, and Lindholm (2011) view spirituality as values and beliefs about meaning and purpose in life and the connectedness to others and the world around us. Their work shows that this inner development of a person is enhanced by most initiatives related to service learning, study abroad, and interdisciplinary coursework. This is likely due to the emphasis such programs place on critical thinking, the consideration of multiple perspectives, and reflective judgment.

The Wabash National Study of Liberal Arts Education (n.d.) is a long-term study looking at socially responsible leadership and other outcomes that a liberal arts education may foster in students by the time they graduate. Of the 12 outcomes studied in the 2006 cohort of 2,200 students, the three with the largest proportion of students showing moderate-to-high growth over four years were moral reasoning (62%), critical thinking (57%), and socially responsible leadership (52%). Results from the Wabash National Study suggest that high-impact practices such as diversity experiences, high-quality interactions with faculty, co-curricular involvement, and positive peer interactions enhance students' cognitive growth, but may be dependent on race, gender, and pre-college experiences (Pascarella & Blaich, 2013). Numerous studies have confirmed the use of a variety of high-impact educational practices in contributing to student success (Kuh et al., 2005; Kuh, 2008). Among these practices are intercultural studies and service learning, as well as other curricular and co-curricular activities that foster reflective and

critical thinking and principled judgment. These forms of integrative learning contribute not only to academic student success but also to the development of socially responsible citizens (Astin, Astin, & Lindholm, 2011; O'Neil, 2012).

The American College Personnel Association (ACPA) Sustainability Task Force is another initiative highlighting, in part, social responsibility among graduates. ACPA provides institutions with a variety of resources, including assessments of student learning outcomes, to assist in their sustainability efforts. The task force has created a "triple bottom line" framework emphasizing healthy environments, social justice, and strong economies. "Triple bottom line" refers to corporations paying attention not only to the traditional bottom line of profit, but also to the bottom lines of social responsibility and environmental performance (Hindle, 2009).

Though limited in number, studies assessing long-term effects of college on graduates show significantly higher levels of civic and community engagement among people with college degrees, suggesting that the social responsibility developed in college may be enduring Pascarella and Terenzini (2005). The importance that businesses and organizations place on social responsibility is evident in the launch in 2010 of ISO 26000. This international standard on social responsibility provides guidance to businesses, governments, and other organizations on "acting in an ethical and transparent way that contributes to the health and welfare of society" (ISO, n.d.). Among the areas that ISO 26000 focuses on are human rights, labor practices, the environment, fair operating practices, consumer issues, and community development and involvement.

Socially Responsible Leadership

As previously mentioned, one of the skills most frequently discussed as a desirable outcome of programs in civic engagement and social responsibility is socially responsible leadership. Many institutions view this ability as one of the characteristics of a successful student and as one of the learning outcomes associated with their mission and goals.

Models of Socially Responsible Leadership

Theoretical models of leadership abound in the research literature. Three models particularly useful for developing social responsibility in college students are Social Change, Leadership Challenge, and Servant Leadership. College and university personnel will find it helpful to have basic knowledge of these three leadership models. A common theme of these models is that leadership is not about position or rank, but is rather about acquiring a set of skills and abilities that can be strengthened through self-development.

Initial development of the Social Change Model of Leadership Development occurred in the 1990s by the Higher Education Research Institute (HERI) at UCLA. This model describes leadership as a collaborative, values-driven process and defines a leader as anyone who wants to work with others to make a difference for the common good (Higher Education Research

Institute, 1996). It is the most widely used college leadership model in the United States (Dugan & Komives, 2010; Komives, Dugan, Owen, Slack, & Wagner, 2011). Seven of the eight values of the Social Change Model are categorized as individual, group, or society/community values. The "individual" values include consciousness of self, congruence, and commitment. The "group" values are collaboration, common purpose, and controversy with civility. Citizenship is the value associated with society/community. Interaction among these seven items results in the eighth value—change for the common good. The Social Change Model illustrates the relationship between the individual and the group seeking a positive change in order to benefit the community (Komives, Lucas, & McMahnon, 2007, p. 354). A graphic depicting these relationships is shown on the Social Change Model website (http://socialchangemodel.ning.com/).

A second leadership model that is useful in developing social responsibility in college students is Leadership Challenge (Kouzes & Posner, 2008), which is based on transformational leadership theory. Through case study and survey research, the authors have identified five practices of exemplary leadership:

- Model the Way,
- Inspire a Shared Vision,
- Challenge the Process,
- Enable Others to Act, and
- Encourage the Heart.

The Student Leadership Practices Inventory (Kouzes & Posner, 2006), a 30-item instrument consisting of statements relating to behaviors associated with the five practices of exemplary leadership, has demonstrated strong psychometric properties. The "self' version is completed by the individual, and the "observer" version provides the opportunity for 360-degree feedback from professors, coaches, student advisors, teammates, and fellow club members. Demographic factors such as year in school, major, GPA, gender, and ethnicity do not have a significant role in explaining leadership behaviors (Kouzes & Posner, 2008).

The third leadership model is Servant Leadership. Robert K. Greenleaf began using the phrase in the 1960s to describe an approach to leadership that focuses on serving others, helping them grow and become more empowered. In his 1970 essay "The Servant as Leader," Greenleaf states that a servant-leader is a servant first, who then makes a conscious choice to aspire to lead (Greenleaf, 1970/2008). Further, he says that the best test of servant leadership is the question "Do those served grow as persons?"

Reviewing the literature, Russell and Stone (2002) identified nine functional attributes (e.g., service, appreciation of others, empowering, etc.) and 11 accompanying attributes/moderating variables (e.g., stewardship, encouragement, teaching, etc.) of servant leadership. Stone, Russell, and Patterson (2004) argue that servant leadership and transformational leadership share many similar characteristics but differ in the focus of the leader; the servant-leader's focus is on people and relationships while the transformational

leader's focus is on organizational results. Building upon this work, Parolini, Patterson, and Winston (2009) developed semantic differential scales that correctly classified 82% of previously identified servant-leaders and 91% of previously identified transformational leaders. The key differences between these two groups of leaders related to focus (individual vs. organizational), primary approach (serve vs. lead), and methods of influence/ persuasion (unconventional vs. customary, freedom vs. control).

Assessing Socially Responsible Leadership and Related Values

As an outgrowth of the Social Change Model of Leadership Development (Higher Education Research Institute, 1996), the Socially Responsible Leadership Scale was developed. This 68-item instrument (SRLS-R2) measures the eight values of the Social Change Model (consciousness of self, congruence, commitment, collaboration, common purpose, controversy with civility, citizenship, change) and is distributed by the National Clearinghouse for Leadership Programs (http://nclp.umd.edu/resources/MultiInstitution.aspx). Reliability and validity of the eight scales have been established through factor analysis. The SLRS-2 has been used in large-scale studies such as the Wabash National Study of Liberal Arts Education and the Multi-Institutional Study of Leadership

The Association of American College and Universities (2013b) provides an excellent list of instruments for measuring student development of personal and social responsibility from cognitive-structural, affective, and other perspectives. The Personal and Social Responsibility Inventory (2011) was developed as part of the AAC&U Core Commitments program. There are two versions of the inventory—one for college students and one for professional staff—both of which examine campus opportunities to develop five dimensions of personal and social responsibility (striving for excellence, cultivating academic integrity, contributing to a larger community, taking seriously the perspectives of others, and developing competence in ethical and moral reasoning and action).

The Bonner Foundation has supported the work of students engaging with the community in service since 1990 in their original pilot program at Berea College (Bonner Foundation, n.d.). More recently, the foundation has created an initiative that has wedded high impact educational practices with community engagement. The initiative began in the 2011-12 academic year and is beginning work with its second cohort of institutions. The Bonner Foundation has supported work to develop a measure of community engagement and research that helps institutions tell the story of success with students who serve. The National Assessment of Service and Community Engagement (NASCE), designed by Don Levy, director of the Siena College Research Institute, and Mathew Johnson, director of Siena College Academic Community Engagement, measures the amount, frequency, and depth of service and community engagement among students at a given institution and compares them to a larger sample of students across multiple institutions (Siena College, n.d.). The NASCE assesses student engagement in service among respondents taking part in nine service areas: civic, environmental, health, religious, youth, economic, and

also elder care, care for the homeless, and care for the hungry. The developers of the instrument believe that engagement in service can be a powerful experience for students; at the same time, students' service assists the community and helps fulfill the civic mission touted by most colleges and universities.

Social responsibility is one of the student learning and development outcomes identified by the Council for the Advancement of Standards in Higher Education (CAS). In a CAS publication, Strayhorn (2006) provides theoretical context, relevant variables, and a variety of instruments for assessing social responsibility.

A number of character traits (e.g., purposefulness, self-reflection, social awareness, integrity, respect, and compassion) and their underlying values are associated with social responsibility (Association of American Colleges & Universities, n.d.). Many national student surveys—such as the College Senior Survey (Higher Education Research Institute, 2013), National Survey of Student Engagement (Indiana University, 2013), and College Student Experiences Questionnaire (Pace & Kuh, 1998)—contain questions related to personal values. Some questions ask the extent to which college experiences contributed to developing values and ethical standards, to community improvement, or deepened spirituality. Other questions ask about level of participation in activities related to civic responsibility and value awareness. It is primarily through such self-report instruments that Pascarella and Terenzini (2005) compiled their comprehensive evaluation of the impact of college attendance on student attitudes, values, and moral development. College and university personnel may find it helpful to use an instrument that is specifically designed to assess character traits. The VIA Survey of Character is a 120-item instrument that exhibits acceptable psychometric properties in measuring traits such as kindness, courage, and fairness (VIA Institute on Character, 2013). Another resource for assessing character traits and values related to social responsibility is the *Journal of College and Character* (www.collegevalues.org), which is a peer-reviewed journal sponsored by NASPA—Student Affairs Administrators in Higher Education (www.naspa.org). The journal focuses on how colleges and universities influence the moral and civic learning and behaviors of college students. The Jon C. Dalton Institute on College Student Values (Florida State University, n.d.) is an annual conference for student affairs professionals and others interested in trends in college student values, ethical issues in college life, and research and applications on building character, moral development, and civic education.

The Defining Issues Test (Office for the Study of Ethical Development, 2013) has been used to provide insight into students' moral reasoning and has demonstrated large effect sizes [3](e.g., .8) when comparing the performance of freshmen and seniors. This instrument was used as part of the 2006-2009 Wabash National Study on Liberal Arts Education as a measure of moral reasoning (Wabash National Study, 2013) . The test consists of several dilemmas, such as

[3] "Effect size" is a statistical term for describing the difference between two groups. It is computed as the mean score of seniors minus the mean score of freshman, and then divided by the standard deviation of the scores of both groups. A commonly cited work on effect size is Cohen (1988). On page 26, Cohen describes the effect size "d" of .8 as "large."

whether a longtime prison escapee who has been living an exemplary life should be reported to authorities, and is based on Kohlberg's (1981) stages of moral development. Kohlberg posited that moral development begins at the pre-conventional level, characterized by obedience and punishment; progresses to the conventional level, where one is guided by social norms and legal authority; and may ultimately reach the post-conventional level, which is the most complex level of moral reasoning, with abstract notions of right and wrong based on social contracts and universal ethics.

Interest in how higher education is preparing students for personal and social responsibility (e.g., Bok, 2006), coupled with the accountability movement, and has led to the development of assessment tools for student work. Through the VALUE (Valid Assessment of Learning in Undergraduate Education) project, the Association of American Colleges and Universities (AAC&U), in conjunction with teams of faculty, developed rubrics for the AAC&U Essential Learning Outcomes (Association of American Colleges and Universities, 2010). Within the category of "Personal and Social Responsibility," separate rubrics were developed for civic knowledge and engagement, intercultural knowledge and competence, ethical reasoning, global learning, and foundations and skills for lifelong learning. These rubrics can be used to evaluate student work and to enhance student learning. Each rubric contains several dimensions of the outcome with narrative descriptions for various levels of accomplishment. For example, the Ethical Reasoning VALUE Rubric has five dimensions: ethical self-awareness, understanding different ethical perspectives/concepts, ethical issue recognition, application of ethical perspectives/concepts, and evaluation of different ethical perspectives/concepts (Association of American Colleges and Universities, 2013c). The dimensions of the Civic Engagement VALUE Rubric are diversity of communities and cultures, analysis of knowledge, civic identity and commitment, civic communication, civic action and reflection, and civic contexts/structures (Association of American Colleges and Universities, 2013c).

Because of the character traits associated with social responsibility, it is likely that there is a link between spirituality and social responsibility. Astin, Astin, and Lindholm (2011) view spirituality as values and beliefs about meaning and purpose in life and the connectedness to others and the world around us. They distinguish "spirituality" from "religiousness" in that the latter is typically characterized by membership in a group of like-minded believers and participation in the group's activities. Using a combination of quantitative and qualitative methods, Chickering, Dalton, and Stamm (2006) conclude that it is possible to assess "ineffable outcomes" such as purpose, meaning, and spiritual growth. In addition to survey questionnaires on beliefs and values, strategies such as self-reflection and observation of behavioral indicators of student attitudes and values are useful in measuring such outcomes. Of particular interest to faith-based colleges and universities is the measurement of spiritual development in students. Both quantitative and qualitative methods were used in the Faithful Change Project, a large-scale (for qualitative studies), longitudinal effort to assess faith development of students enrolled at member institutions of the Council for Christian Colleges and Universities (Holcomb & Nonneman, 2004). The theoretical basis for this study was Fowler's (1996) seven stages of faith

development. Students who had reached the "3.5 transitional stage" generally had experienced a crisis, where crisis is defined as "prolonged periods of active engagement with, and exploration of, competing roles and ideologies." Examples of crisis included being around people who think differently, having one's beliefs challenged in science and theology courses, exposure to multiple cultures, and emotional challenges such as death or serious illness of a close friend. The type of crisis was not particularly important to the amount of spiritual growth, as long as it challenged students to examine what they believed and why.

Conclusion

Educating successful students to become civically engaged and socially responsible citizens is grounded in the historical and traditional mission of higher education, and is supported by student development theories. Three models particularly useful for developing social responsibility in college students are Social Change, Leadership Challenge, and Servant Leadership. Various components of social responsibility can be measured through self-reported surveys, responses to moral dilemmas, and rubrics. High-impact educational practices such as intercultural studies and service learning, as well as other curricular and co-curricular activities that foster reflective and critical thinking, principled judgment, taking into account multiple perspectives, and integrative learning contribute not only to academic student success but also to the development of socially responsible citizens. One aspect of integrative learning is the ability to apply what was learned in a particular setting to new and complex situations. It appears that success in developing social responsibility in students will result in their post-college engagement in community and civic affairs, increase their concern as an employee or executive about the "triple bottom line," and encourage their support as a business or organizational leader of ISO 26000.

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Appendix

Table 1. Comparison of Developmental Theorists. This table is meant to illustrate developmental stages; it is not meant for the reader to draw one-to-one comparisons among various stages/positions. The theories are unique, but we have found it helpful to look at several theories at once to develop a more complete picture of students.

<table>
<tr><th>Description</th><th>Lawrence Kohlberg</th><th>William Perry</th><th>King and Kitchener</th></tr>
<tr><td rowspan="2">These stages are marked by right vs. wrong, egocentrism, belief that reality can be known. There is a crack in this duality as one moves closer to the next stages.</td><td>Pre-conventional Moral Reasoning Stage 1</td><td>Dualism: Position 1</td><td>Stage 1: Copy View of Reality</td></tr>
<tr><td>Pre-conventional Moral Reasoning Stage 2</td><td>Dualism: Position 2</td><td>Stage 2: Authority</td></tr>
<tr><td rowspan="2">These stages are characterized by the belief that there are multiple viewpoints of equal value. Viewpoints begin to move beyond self. These stages acknowledge the lack of certainty.</td><td>Conventional Moral Reasoning Stage 3</td><td>Multiplicity: Position 3</td><td>Stage 3: Feeling</td></tr>
<tr><td>Conventional Moral Reasoning Stage 4</td><td rowspan="2">Multiplicity: Position 4</td><td>Stage 4: Idiosyncratic</td></tr>
<tr><td rowspan="3">These stages acknowledge that some points of view are more valid than others in any given context. Knowledge is considered relative and its value subjective.</td><td rowspan="2">Conventional Moral Reasoning Stage 5</td><td rowspan="2">Stage 5: Context</td></tr>
<tr><td>Relativism: Position 5</td></tr>
<tr><td rowspan="2">Conventional Moral Reasoning Stage 6</td><td>Relativism: Position 6</td><td rowspan="2">Stage 6: Across Context</td></tr>
<tr><td rowspan="3">These stages are characterized by making a commitment despite some unanswered questions.</td><td>Commitment within Relativism: Position 7</td></tr>
<tr><td rowspan="2">Conventional Moral Reasoning Stage 7</td><td>Commitment within Relativism: Position 8</td><td rowspan="2">Stage 7: Reflective Judgment</td></tr>
<tr><td>Commitment within Relativism: Position 9</td></tr>
</table>

Source: Compiled from Kohlberg (1981), Perry (1999), King and Kitchener (1994).

Table 2. Seven Vectors of Development (based on Chickering, 1972)

In math, a vector has a starting point and continues infinitely in a direction.

Vector	Description
1. Developing Competence	
Intellectual Competence	Development of critical thinking; abstract thought; the relationship between personality and development of intellect. Acquisition of knowledge.
Physical & Manual Competence	Development of physical skills. Athletic or artistic endeavors are designed to increase ability, etc.
Interpersonal Competence	Social competence. Can assume a variety of roles in the social context. Is able to understand the concerns and motives of others.
Sense of Competence	Has a sense of what is needed. Depends on one's actual competencies. Trusts one's own abilities makes for a more open and energetic action in the service of learning and development.
2. Managing Emotions	Has an effect on social exchange. The ability to keep emotions in check while being genuine.
Awareness	This struggle is to find legitimate ways to express aggression and love.
Integration	The recognition that emotions can serve as a basis for action and decision and can often be a legitimate source of information. Responses become congruent with values.
3. Developing Autonomy	
Emotional Independence	The road to emotional independence begins with disengagement from parents, proceeds through reliance on peers, and culminates with personal autonomy.
Instrumental Independence	Two major components: 1. The ability to carry out activities and to be self-sufficient. 2. The ability to move from one location to another if one wishes.
Interdependence	The recognition of interdependence on others and acting on that recognition.

Vector	Description
4. Establishing Identity	A sense of self is formed when the developmental tasks for competence, emotions, and autonomy are achieved with some success. This sense of self is needed for purpose, relationships and integrity.
5. Freeing Interpersonal Relationships	Characterized by: 1. Developing openness to and respect for those from different backgrounds. 2. A shift in the quality of relationships with intimates and close friends.
6. Developing Purpose	Requires formulating plans for three major elements.
Avocational and Recreational Interests	Marked by the stabilization and deepening of interests from concurrent forces: 1. Sex-social interests increase is accompanied by decrease in other interests. 2. Clarification of vocational plans and aspirations. 3. Recognition and acceptance that every affirmation is 90% renunciation of something else.
Vocational Plans and Aspirations	Presence or absence of vocational goals or clear plans for the future influences how time is spent in college.
Style of Life	Clarification of long-range goals and the intermediate and long-range steps required.
7. Developing Integrity	A personally valid set of beliefs and values that have internal consistency and that provide a guide to behavior is developed. Thinks about the kind of person one is and would become.

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Workforce and Technical Skill Education and Its Assessment of Student Success

Tom Schenk, Jr.
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Education is all, to some extent, workforce development. Whether students major in engineering or English, successful outcomes tend to be those where students find a successful career. Yet, there are programs that are especially targeted for the workforce which should be assessed differently than traditional college programs.[1] Workforce and technical skill programs are focused programs whose intent is for program graduates to immediately transition to related occupations.

Workforce programs are distinct from traditional college programs in a number of ways. First, the main driver of these programs is workforce development, with programs often responding to the local labor market. Second, some programs are not offered as credit courses. In a noncredit setting, grades are not the primary criterion and the structure of classes differs greatly compared to a traditional credit course. These programs may not lead to a traditional college degree, but to a certificate or industry credential instead. Moreover, training may not be offered in college classrooms or laboratories, but at job sites. For these reasons, much of the literature refers to workforce and technical skill training as "specific" training, as opposed to general training, which prepares a student for a variety of careers (Becker, 1964).

There are a number of ways to evaluate student success in workforce and technical skill programs. One of the most compelling methods is to evaluate the workforce outcomes of participants. These assessments are based on the well-known link between education and wages revealed by human capital theory. Other measures of workforce outcomes, such as the earning of certificates or licensures, are often implicit measures of pecuniary returns.

The earnings of students are rising in importance, in part due to increasing concern about student loans. The percentage of students who borrow the maximum allowable amount of federal student loans has increased to more than 73% (Wei & Berkner, 2008). These loans have the potential to disrupt a graduate's ability later in life in a way that is not captured in student retention or graduation rates. In response, the Higher Education Act was revised to "ensure that participating schools actually prepare their students for employment, such as those students can

[1] This chapter focuses on vocational, career-focused education at colleges and universities. However, on-the-job training is a significant source of training. Although the mechanics of on-the-job training differs slightly (Mincer, 1962; Barron, Black, & Lowenstein, 1989), returns to on-the-job training are significant within one employer, and do not transfer to other employers (Frazis & Loewenstein, 2006). Recently, some hybrid programs combining traditional and on-the-job training have been implemented in Michigan and Iowa (e.g., Jin & Lipsman, 2011).

repay their loans" (Public Law 110–315). In addition, the Voluntary Framework for Accountability (VFA) posits a number of metrics to measure student progress through the career pathway (American Association of Community Colleges, 2012). By focusing on the pathway, the framework requires data on student transitions to further education and wages as part of its metrics.

Even with the rise in legal and voluntary accountability requirements that include wage data, numerous studies have attempted to evaluate workforce and technical skill programs using workforce outcomes—specifically, wage data. The studies have primarily used descriptive data, but as this chapter will highlight, it is difficult to render a clear assessment of programs with those metrics.

This chapter briefly reviews the linkage that makes pecuniary outcomes for students a desirable accountability measure. Then, we will discuss the workforce metrics proposed by the VFA, including those for noncredit and adult basic education/GED[2] programs. Building off of the theoretical linkage, we discuss further metrics, such as net present value and internal rate of return of education.

Theoretical Link Between Wages and Education

Workforce and technical programs are premised on a well-known fact: Education improves workforce performance, increases earnings, and lowers the chance for unemployment. Years of Census Bureau data have continually shown that individuals with higher education earn more in the workforce. In 2009, half of workers in the United States with a bachelor's degree earned $1,025 a week, associate's recipients earned $761 a week, high school graduates earned $626 a week, and those with less than a high school diploma earned $454 a week (Bureau of Labor Services, 2010). Moreover, obtaining more education is associated with lower unemployment rates; the yearly unemployment rate in 2009 was 7.9% in the United States, but for college graduates it was only 5.2%, compared to 9.7% for high school graduates and 14.6% for those without a high school diploma.

Human capital theory—which describes the link between education and earnings—predicts educated individuals will earn higher wages (see Becker, 1964). Educated individuals will be more productive since they will be trained to use technology, will work more intelligently, and will be able to adapt. For instance, Huffman (1974) showed educated farmers were more adaptive to changes in soil conditions at their farms. Consequently, educated farmers could respond better to changing conditions and had higher productivity than less educated farmers.

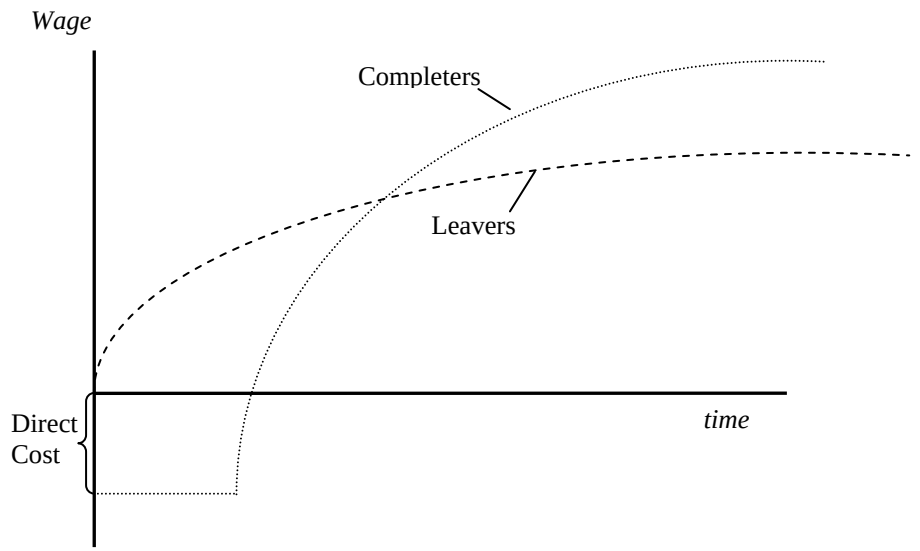
In other industries, higher productivity will mean higher wages. More productive workers will make more money for the firm; thus, the firm will be able to pay productive workers more.

[2] General Educational Development tests—five examinations that measure ability in content areas similar to those in a high school course of study. GED® graduates earn a GED® credential. See http://www.gedtestingservice.com/testers/faqs-test-taker#GED_stand_for

Human capital theory also predicts participants of workforce and technical skill programs will receive an even higher premium for their education. That is because these programs fall within a category of education called “specific” and “on-the-job” training.

Figure 1 shows the theoretical relationship between a student completing a job training program (completers) and a student leaving early (leavers). At first, completers will need to pay for education while leavers enjoy a reasonable wage. After graduation, completers will see a large increase in wages, overtaking earnings of leavers. Eventually, earnings will begin to flatten for both groups as the impact of education diminishes.

Figure 1. Theoretical Wages of Higher Education Leavers and Completers



Workforce and technical skill programs, at the very least, offer training in specific occupations. Many graduates will be highly prepared for these specific occupations, but they are limited in their choices. Thus, as human capital theory states, these students will require higher wages in order to compensate for their limited set of choices. Firms, meanwhile, will be willing to pay more. Also, in theory graduates from workforce programs will be less mobile and less likely to change jobs. This longevity should be valued by firms who will not need to continually seek replacements.

Career Pathway

Workforce education is complicated by having multiple entry and exit points. The VFA suggests a list of at least 27 outcomes that are being tracked and piloted at 87 community colleges (American Association of Community Colleges, 2013). While some metrics are familiar (percentage of students retained and completed degrees), others are more specific—for example,

the percentage of students who left institutions without an award, with less than 30 credits six years after their start (see American Association of Community Colleges, 2012). A complete framework, which attempts to capture all outcomes, as opposed to positive outcomes (e.g., retention, graduation) alone, provides a complete picture.

This also extends to workforce outcomes, which VFA addresses in the metrics for Career and Technical Education (CTE) and Non-Credit Courses (American Association of Community Colleges, n.d.-a). Within CTE, VFA captures:

- the number of awards in CTE,
- the licensure exam passing rate,
- the percentage of CTE students who complete a program or earn 90 contact hours and are employed with a livable wage, and
- the median wage growth of CTE students.

Noncredit course outcomes include the following metrics:

- noncredit workforce enrollment,
- number of state/industry-recognized credentials, and
- transition from noncredit to credit.

Additionally, one of the three outcomes for adult basic education (ABE) (e.g., GED) tracks the percentage of ABE/GED students who gain employment.

Most of these metrics either directly or implicitly measure workforce outcomes. One metric within CTE and noncredit enrollment tracks the passing rate or the number of licensings or certifications obtained by students. While the relationship between a college degree and earnings is well known, very little research investigates the relationship between licenses/certifications with earnings. However, recent evidence suggests obtaining a license holds a 29% wage premium (Kleiner & Krueger, 2008).

While VFA is actively being used, the U.S. Department of Education's definition of "gainful employment" will impact the rapidly growing for-profit university and vocational schools, including many community colleges. Gainful employment is not a new term. The Higher Education Act required postsecondary vocational colleges to "provide an eligible program of training to prepare students for gainful employment in a recognized occupation." Yet, the precise measure of gainful employment has not been defined in administrative code.

The U.S. Department of Education's attempted definition has been manifested in a trio of measures: the student loan debt-to-income ratio, the percentage of students who are repaying student loan debt, and debt-to-discretionary income level. All three measures are tied to income of graduates and debt levels. Debt levels have rapidly increased in past years as students become more dependent on loans. The percentage of students who have borrowed the maximum amount for federal loans increased from 13% in 1990 to 73% in 2004 (Wei & Berkner, 2008; Berkner, 2000). The precise benchmarks for these metrics have been contentious. At the time of writing, the U.S. Department of Education has drafted two versions of their administrative rules after the initial rules were invalidated as part of a lawsuit (Lederman, 2012; Nelson, 2013).

So far, the U.S. Department of Education is not relying on self-reported data, instead opting for behind-the-scene connections to data. For instance, wage data is obtained from the Social Security Administration (SSA), which is rarely released to the public. While information from SSA would be released from the department, individual colleges and programs would not be able to manipulate the data to reveal further detail on students' outcomes that was not provided by the department.

Workforce Outcomes Data

Assuming for a moment it is relatively easy to track measures of student progression (e.g., graduation or number of contact hours), it has been a greater challenge to capture meaningful workforce data that is not entirely dependent on survey responses and alumni engagement.

Fortunately, assessments utilizing wage data have grown tremendously due to an increasing availability of individual-specific wage data through state administrative records (see Sanchez & Laanan, 1999). Advancements in linking educational and workforce records have also been aided by a coordinated effort to build statewide longitudinal data system through grants and various pieces of legislation. The Data Quality Campaign is a nonprofit that has vigorously lobbied for legislation permitting and advocating the linking of educational and work records, initially by proposing elements that should be linked within each state. After widespread success, the organization has grown into other policy areas, such as establishing data governance and creating actionable steps based on linked data.

The presumption, however, is that researchers can find program participants using their institution's data set. Yet the researcher will still need to categorize the workforce programs, obtain wage data, and use appropriate methodology. Workforce programs contain a diverse set of programs that range from architecture to viticulture. Thus, it's important for researchers to be able to categorize programs that can be easily presented while being able to group similar programs based on content.

One plausible solution is to use the Classification of Instructional Programs (CIP) numbers to group similar programs. CIP numbers are six-digit numbers developed in 1985 to classify postsecondary majors. The list is updated regularly and a revised catalog was released in 2010. Each pair of digits conveys some information about the major. The first two digits describe the program area; for instance, 01 denotes agriculture and agriculture operations programs. The next two digits denote sub-program areas with more specific, but still general description. The CIP 01.02 programs are agriculture mechanization programs. The final two digits denote the specific program. The CIP number 01.0204 denotes agriculture power machinery operation programs.

Table 1. Major Classifications of Workforce Programs

Classification of Instructional Programs (2000)	Career Clusters	SOC/O*Net
Agriculture, agricultural operations, and related sciences	Agriculture, food, and natural resources	Architecture and engineering occupations
Architecture and related services	Architecture and construction	Arts, design, entertainment, sports, and media occupations
Area, ethnic, cultural, and gender studies	Arts, A/V technology, and communication	Building and grounds cleaning and maintenance occupations
Basic skills	Business, management, and administration	Business and financial operations occupations
Biological and biomedical sciences	Education and training	Community and social service occupations
Business, management, marketing, and related services	Finance	Computer and mathematical occupations
Citizenship activities	Government and public administrative	Construction and extraction occupations
Communications technologies and support services	Health science	Education, training, and library occupations
Communications, journalism, and related programs.	Hospitality and tourism	Farming, fishing, and forestry occupations
Computer and information sciences and support services	Human services	Food preparation and serving-related occupations
Construction trades	Information technology	Healthcare practitioners and technical occupations
Dental, medical and veterinary residency programs	Law, public safety, corrections, and security	Healthcare support occupations
Education	Manufacturing	Installation, maintenance, and repair occupations
Engineering	Marketing, sales, and service	Legal occupations
Engineering technology	Science, technology, engineering, and mathematics	Life, physical, and social science occupations
English language and literature/letters	Transportation, distribution, and logistics	Management occupations
Family and consumer sciences/human sciences		Military specific occupations
Foreign languages, literatures, and linguistics		Office and administrative support occupations
Health professions and related clinical sciences		Personal care and service occupations
Health-related knowledge and skills		Production occupations
High school/secondary diplomas and certificate programs		Protective service occupations
History		Sales and related occupations
Interpersonal and social skills		Transportation and material moving occupations

Law, legal services, and legal studies
Leisure and recreational activities
Liberal arts and sciences, general studies, and humanities
Library science
Mathematics and statistics
Mechanic and repair technology
Military technologies
Multi/interdisciplinary studies
Natural resources and conservation
Parks, recreation, leisure and fitness studies
Personal and culinary services
Personal awareness and self-improvement
Philosophy and religion
Physical sciences
Precision production trades
Protective services
Psychology
Public administration and services
Science technologies/technicians
Social sciences
Theological studies and religious vocations
Transportation and materials moving services
Visual and performing arts

Source: National Center of Education Statistics, Classification of Instructional Programs 2000; States' Career Cluster Initiative; U.S. Department of Labor, Bureau of Labor Services.

CIP numbers are widely used in postsecondary education, so results can be easily communicated within and between postsecondary institutions. However, there are more than 50 program areas defined by the two-digit CIP. This may be too many if researchers were to summarize data for all program areas at once.

An alternative solution is to use the National Career Clusters framework. Career clusters consist of 16 program areas grouped by occupational skill. As opposed to the more than 50 CIP program areas, the 16 career clusters are more succinct so results can be easily displayed, but broad enough to be descriptive. The National Career Cluster Initiative website (www.careertech.org) contains a crosswalk from CIPs to the sixteen clusters. In addition, the National Association of State Directors of Career Technical Education Consortium (NASDCTEC) that maintains the Career Clusters and the website has initiated a project to identify and create standards for the Common Career Technical Core, a set of core competencies for each Career Cluster.

Researchers may be quite familiar with various taxonomies for majors, but less familiar with occupational classification schemes. As with college programs, multiple systems classify various occupations. The Standard Occupational Classification (SOC—pronounced “sock”) system is one such taxonomy supported by the U.S. Bureau of Labor Services. The Occupational Information Network (O*Net) also provides a standardized list of occupations. Fortunately, there are crosswalks between CIP, SOC, O*Net, and Career Clusters provided by the National Crosswalk Center (www.xwalkcenter.org). Table 1 shows the major categories used in the CIP, Career Cluster, and SOC/O*Net system.

Unemployment insurance (UI) records, despite the name, contain employment and wage information for most employed workers within a state. These records are becoming increasingly available to researchers in order to match education and wage records. UI records provide earnings for individuals for each quarter. Additional elements of UI records contain Social Security numbers, company names, company addresses, industry, quarter (e.g., Q3), and year (e.g., 2013). Some states have access to more information, such as the individual’s occupation or the number of hours worked. Table 2 shows the list of states and their respective state agencies that maintain unemployment insurance records.

Table 2. List of State Agencies That Maintain Unemployment Insurance Records

State	Agency
Alabama	Department of Industrial Relations
Alaska	Department of Labor and Workforce Development
Arizona	Department of Economic Security
Arkansas	Department of Workforce Services
California	Employment Development Department
Colorado	Department of Labor and Employment
Connecticut	Department of Labor

Delaware	Department of Labor
District of Columbia	Department of Employment Services
Florida	Agency for Workforce Innovation
Georgia	Department of Labor
Hawaii	Department of Labor and Industrial Relations
Idaho	Department of Labor
Illinois	Department of Employment Security
Indiana	Department of Workforce Development
Iowa	Workforce Development
Kansas	Department of Labor
Kentucky	Office of Employment and Training
Louisiana	Workforce Commission
Maine	Department of Labor
Maryland	Department of Labor, Licensing, and Regulation
Massachusetts	Labor and Workforce Development
Michigan	Department of Energy, Labor, and Economic Growth
Minnesota	Department of Employment and Economic Development
Mississippi	Department of Employment Security
Missouri	Department of Labor and Industrial Relations
Montana	Department of Labor and Industry
Nebraska	Department of Labor
Nevada	Department of Employment, Training and Rehabilitation
New Hampshire	Department of Employment Security
New Jersey	Department of Labor and Workforce Development
New Mexico	Department of Workforce Solutions
New York	Department of Labor
North Carolina	Employment Security Commission
North Dakota	Job Service
Ohio	Department of Job and Family Services
Oklahoma	Employment Security Commission
Oregon	Employment Department
Pennsylvania	Department of Labor and Industry
Rhode Island	Department of Labor and Training
South Carolina	Department of Employment and Workforce
South Dakota	Department of Labor
Tennessee	Department of Labor and Workforce Development
Texas	Workforce Commission
Utah	Department of Workforce Services

Vermont	Department of Labor
Virginia	Employment Commission
Washington	Employment Security Department
West Virginia	Workforce
Wisconsin	Department of Workforce Development
Wyoming	Department of Employment

Source: Career OneStop, www.servicelocator.org/OWSLinks.asp

There are some necessary caveats with UI records. First, they contain wage information of the individual for almost every employer. That is, an individual with multiple jobs will be reflected in the same manner, and this results in multiple records for some individuals. Most states do not specify the intensity of employment. For example, someone may have worked half-time for the entire quarter, or they may have worked full-time for part of the quarter. The employers address reflects the company's payroll office—which is not necessarily the location where the individual is located. Also, as these records contain state data, they will not include out-of-state employment unless there is an inter-state agreement. Finally, UI records do not contain information on federal employees, members of the armed forces, the self-employed, proprietors, unpaid family workers, church employees, and railroad workers covered by the railroad unemployment insurance system, as well as students employed in a college or university as part of a financial aid package.

Data on federal employees (e.g., postal workers) and the military can be obtained from the Federal Employment Data Exchange System (FEDES). FEDES contains employment records from Office of Personnel Management, U.S. Postal Service, and Department of Defense (Stevens, 2008). Unlike most UI records, data returned from FEDES includes occupational information (e.g., SOC) for individuals in each agency.

Both the federal and the state data are sensitive data because they contain both financial information and also Social Security numbers. Different states will have different procedures for obtaining the data and there may be a cost associated with getting them.

Even though workforce and technical skill programs are meant to lead immediately to direct employment, some students will inevitably transfer or remain in higher education, instead. The VFA includes reporting data on the transition of students from career training to further education. Researchers typically use the National Student Clearinghouse to match program participants after they leave an institution. The National Student Clearinghouse is a subscription-based database containing enrollment records of over 92% (more than 3,200 postsecondary institutions) of postsecondary enrollment (see Porter, 2002). Researchers can use the National Student Clearinghouse to see what, if any, institutions former program participants enrolled in after leaving.

A fundamental consideration in all education research that looks at student success is whether a program is better than some alternative path. For instance, is completing a workforce program more valuable than dropping out early? A compelling method to answer this question is to compare a cohort of completers to a cohort of leavers. Suppose a student, who completed

some postsecondary schooling, is on the verge of registering for his final year of courses. But does the student go to the college's website and register for a final year of courses or does he search for jobs online? While researchers are not able to see students experience both options, they can get an idea by comparing a cohort of students who chose to register and complete a degree to those who decided to leave. Ideally, students will remain in school and be rewarded over the long-term.

Evaluating Wage Outcomes: Assessing CTE Programs at Iowa Community Colleges

All of Iowa's community colleges offer one- and two-year career and technical education (CTE) programs for students. Almost a third of all Iowa community college students are enrolled in CTE programs (Iowa Department of Education, 2011). These programs encourage students to obtain employment in a field related to their study after graduation. Most CTE students are available to enter the workforce after graduation since only 15% of CTE completers transfer to a four-year university after graduation. Since CTE students are seeking career goals it is appropriate to look at their earnings outcomes based on their success in their program. State law even goes so far as to require that graduates of specific CTE programs earn wages upon graduation that are greater than the cost of the programs themselves. The remainder of this chapter will provide an assessment of student success in these CTE programs using workforce outcomes.

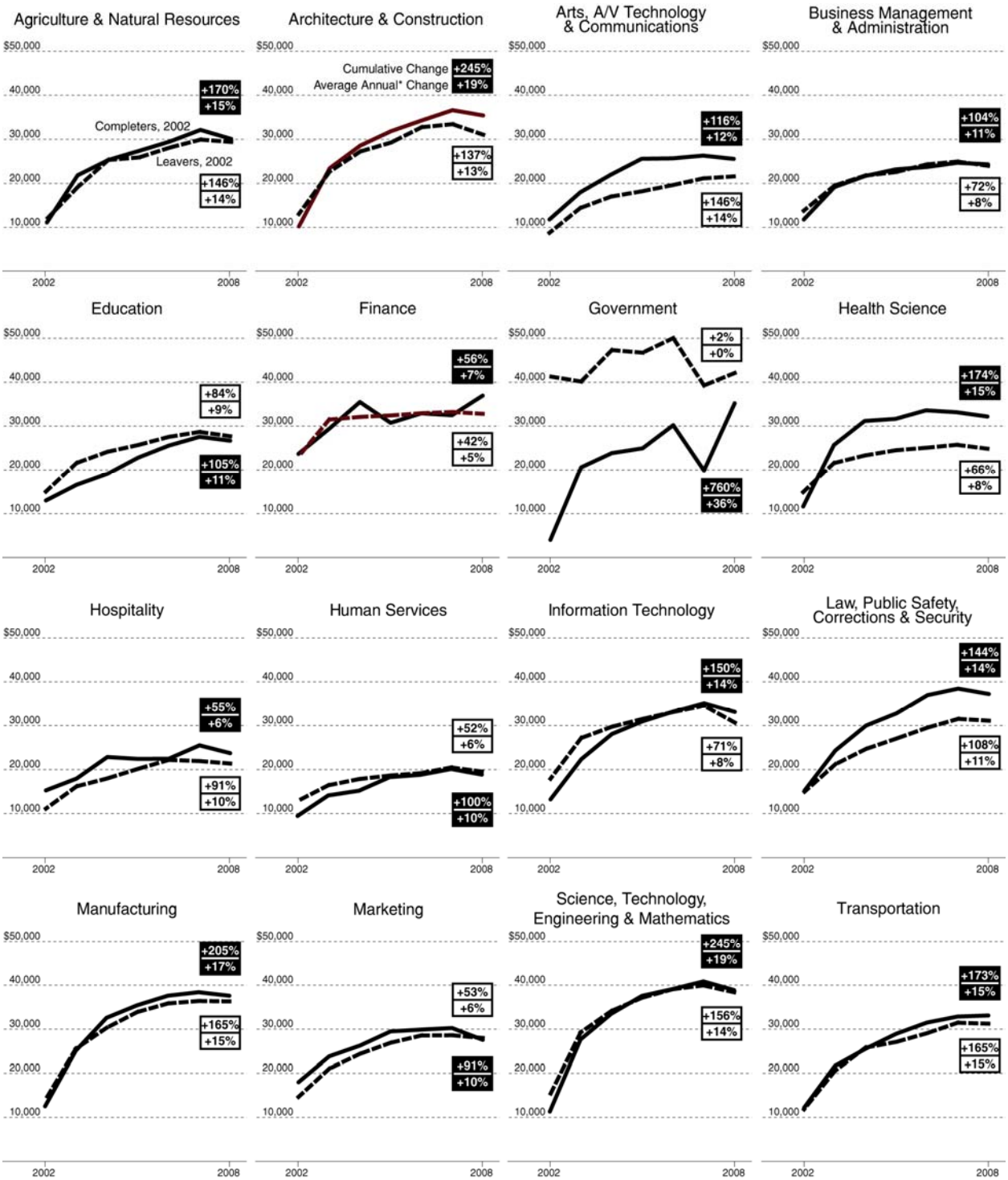
Figure 2 shows inflation-adjusted median wages between 2002 and 2008 by Career Cluster—the preferred method of aggregation. Median wages are shown on an *n*-tuple line plot. This style of plot allows an easy comparison when each graph is set on a grid with the same vertical and horizontal axis with minimal clutter.[3]

Wages were obtained from Iowa's UI records. Median wages are shown for completers and leavers. Completers were enrolled in community college in 2002; leavers were enrolled in community college in 2001 but entered the workforce in 2002 without completing a degree. Thus, completers spent 2002 in school, but finished at least one degree by the end of the year. Meanwhile, leavers had foregone a college degree in favor of entering the workforce early. The wages for completers are shown by the solid line; the wages for non-completers are shown as the dotted line.

Students—either completers or leavers—were omitted from the data if they continued to enroll in higher education after 2002. Unfortunately, UI records only reveal if students were working in the state. Missing students could have moved outside the state, worked in an industry

[3] This process is also described as *faceting* (Wilkinson, 2005) and is available in several advanced statistical software packages. Faceting or *n*-tuple charts can also be manually created with other software such as Excel or Adobe Illustrator.

Figure 2. Iowa Community Colleges Median Wages for Completers and Leavers by Career Cluster, 2002-2008



Note. Average annual change is calculated using the geometric average rate of growth formulation. *Source:* Iowa Department of Education & Iowa Workforce Development (2010).

not covered by the UI database,[4] or not been working. Students were omitted if they showed no earnings within an entire year. One exception, though, are completers in 2002 since currently enrolled students may opt not to work but are known to be enrolled in community college.[5]

Wages are then adjusted for inflation to 2008 levels using the Consumer Price Index–Urban from the Bureau of Labor Statistics. It is important to adjust for inflation[6] since wages will often grow at least with the changes in price levels. Thus, changes in these adjusted wages over time will resemble the changes in real income.

A number of similar studies have analyzed median wages of leavers and completers (Friedlander, 1993a, 1993b, 1996; Laanan, 1998; Seppanen, 1998). Median wages is the preferred statistic since it is not sensitive to extreme outliers, which can be prevalent in wage data.

Median wages were highest for science, technology, engineering, and mathematics (STEM) completers.[7] Most Career Clusters had higher median wages for completers by 2008, but notable exceptions were education, government, human services, and marketing majors. Clearly, the assessment for the latter programs is troubling but only seems to occur in 2012.

Researchers can also analyze the *gap* between completers and leavers. In this case, health completers had median earnings that were over seven thousand dollars more than those of leavers. Law, public safety, corrections, and security showed a gap of six thousand dollars, followed by architecture and construction, finance, and arts, A/V, and communications.

But higher median wages for completers is not *sufficient* for a positive assessment. Some programs—business, finance, and IT—only saw higher median wages for completers in the sixth year after graduation. Additionally, it is unclear what constitutes a "good" wage. One could compare median wages for each Career Cluster to the respective state median wage—$49,007 for Iowa in 2008 (U.S. Census Bureau, 2010). But this comparison is problematic since the state median income includes all ages and education levels. "Sufficient" wages, such as poverty levels, are inextricably tied to household size—data typically unavailable in administrative records.

Another set of metrics is cumulative and annual change in wages. Both are shown in Figure 2 for completers and leavers.[8] For example, for those in the agriculture and natural

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[4] UI records systematically exclude several industries: federal employees, members of the armed forces, the self-employed, proprietors, unpaid family workers, church employees, railroad workers covered by the railroad unemployment insurance, and students employed in a college or university as part of a financial aid package.

[5] These were individuals who weren't working in 2002 but were enrolled in college—essentially, nonworking students.

[6] Current wages in year *t* are adjusted for inflation from each current year, *t*, to 2008 using:

$$\left(CPI_{2008} / CPI_t\right) w_t$$

[7] Government leavers had higher median wages, but the entire group consisted of less than 10 students.

[8] Average annual changes in wages were calculated using the average geometric rate of growth. As opposed to the traditional algebraic rate of growth, the geometric mean is less sensitive to outliers. Specifically, the average growth in wages, *w*, over *t* years until the final year *T* is: $\left(\frac{w_T}{w_t}\right)^{1/T} - 1$

resources clusters, the completers had a compound growth of wages of 170% and annual growth of 15% while the non-completers had a compound growth of 146% or an average growth of 14%. The cumulative and average change was typically higher for completers than leavers in each program. There was also a notable decline in wages between 2007 and 2008 due to the beginning of the 2008-09 recession. Still, these results are inconclusive for assessment since it is difficult to distinguish a "good" from a "bad" result. Finance majors, for instance, had higher median wages and a large wage gap but only saw mediocre wage growth.

Descriptive measures such as these are often found in the literature but often they fail to clearly identifying satisfactory results. A significant strand of economics literature has eschewed descriptive statistics in favor of calculating the returns to education (e.g., Grubb, 1993; Heckman, Lochner, & Todd, 2005; Kane & Rouse, 1995). This strand of research interprets education as a type of investment (e.g., time and tuition), which provides economic returns (e.g., wages). Insofar as education is a type of investment, the normative claim is the returns from education *should* at least cover the cost of education. This is also practical in the current policy environment where rising tuitions have been heavily critiqued.

But tuition only represents one type of cost—the direct cost of schooling. The largest cost for students is typically their opportunity cost, or the earnings students forego to continue school. This is commonly represented by the difference in earnings between completers and leavers for when the student is enrolled.

A third cost of schooling, time costs, includes the psychic discounting of earnings over time. Thus, programs are less desirable if they only provide a relative return in later years. Associating costs with time, interestingly, is a natural process that occurs in the brain where short-term rewards are compared with long-term benefits (Camerer, Loewenstein, & Prelec, 2005; McClure, Ericson, Laibson, Loewenstein, & Cohen, 2007).

Schenk & Matsuyama (2009) describe a method to calculate returns relative to the cost of education using administrative datasets. Two measures, net present value and internal rate of return, provide the net benefit of education by comparing wages earned to direct, opportunity, and time costs.[9] Table 3 shows the results of this analysis for the previously mentioned Iowa CTE wage data.

Net present value provides a dollar value, which is the net benefit of education over six years, by major. We have simplified the stream of earnings between 2002 and 2008 into a single number for each major. Positive values indicate the wages for completing the program exceed the costs. Negative values mean the cost of education has not been recouped yet. This simple delineation provides a clear system for accountability.

[9] Both net present value and internal rate of return are calculated using a similar function for wages, w, in each year, t, until the final year T for completers, m, and leavers, l with tuition costs C.

$$\sum_{t=1}^{T} \frac{w_{tm} - w_{tl}}{(1+i)^t} - C_t$$

Net present value is calculated by assuming an interest rate, i, and solving. Internal rate of return is found by leaving i unknown and finding the root of the resulting polynomial through a multiple iteration technique.

Table 3. Net Present Value and Rate of Return by Career Cluster

Career Cluster	Net Present Value ($)	Rate of Return (%)
Agriculture & Natural Resources	-913	4.6
Architecture & Construction	24,563	30.8
Arts, A/V & Communications	-20,702	[1]
Business Management & Administration	-23,407	[1]
Education	-22,168	[1]
Finance	35,450	46.0
Government	-13,315	-17.6
Health Science	21,860	32.9
Hospitality	-33,237	[1]
Human Services	-50,902	[1]
Information Technology	22,391	26.7
Law, Public Safety, Corrections & Security	29,763	53.0
Manufacturing	35,364	37.8
Marketing	4,883	12.9
Science, Technology, Engineering & Mathematics	53,578	49.1
Transportation	5,947	12.9

Note. Net present values were calculated using a 3% discount rate. A superscript 1, or [1], denotes that rate-of-return calculations did not converge. In all cases, returns were "infinity negative." *Source:* Schenk & Matsuyama (2009).

The net present value itself—besides being positive or negative—can be interpreted as the profit from the investment in education. In this data set, health majors would lose $21,860 in net income over six years by choosing to leave community college before completing a degree. Iowa's government program graduates lost on average $13,315 over six years. What is the motivation for these students to complete a program? They could be incentivized to stay and complete a degree through scholarships or tuition reductions. But how much should those scholarships be worth? Net present value provides that answer: Government CTE students would be fairly compensated by paying $13,315 less a year or by being given an equivalent scholarship. Thus, net present value can be called the *compensation differential*—the dollar value that can compensate for changes in behavior.[10]

[10] As previously mentioned, this has a small cell size of only 10 students.

Net present values are dollar amounts that are easily familiar to most readers. However, even after adjusting for inflation, it can be difficult to compare dollar amounts within nations, states, or provinces. The internal rate of return provides essentially the same information as net present value, but expresses it as percentages which can be compared across regions with different costs of living. That is, internal rate of returns presents the value of education in a similar fashion to how a stock portfolio would be described.

The measure is interpreted as the percentage return for each dollar invested. For example, the 49.1% return for STEM programs means a $10 investment returns $4.91 in profit (the original $10 investment would also be returned). The internal rate of return also has the same demarcation between positive and negative values—the former indicates a positive assessment, and the latter indicates a negative assessment.

Some internal rate of returns, however, cannot be calculated. Some programs have very few completers who ever earn more than leavers over the time of the analysis. These students, consequently, never earned enough to cover their costs—not even for a single year. This scenario leads to an infinitely negative internal rate of return. While the exact rate of return cannot be calculated, it is a negative return by definition. In fact, these “infinitely negative” returns are the most troubling result.

Summary

Workforce and technical skill programs are meant to meet workforce needs, so the most sensible approach to assessment is to measure wages after completing the program. Fortunately, this method of analysis has become possible with the emergence of administrative datasets like unemployment insurance records. This chapter explored several methods to assess workforce programs using these data.

Descriptive data has been highly utilized and is relatively simple to calculate. However, it is difficult to assess programs because the criteria with which to assess these programs are unclear. Two other measures of workforce outcomes, net present value and internal rate of return, provide a better set of metrics since it is easier to distinguish between a good outcome versus a negative outcome. Presenting these alternative methodologies will provide multiple metrics for associating student career success to career and technical education.

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Student Evaluation of Teaching

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When there is a discussion of student success, it is very likely to start with a mental model of the students in a classroom and a faculty member engaged in teaching. The traditional starting point is focused on the process of teaching and the ability of the teacher.[1] What are the characteristics of effective college teaching, and more specifically, how do we measure such characteristics? These questions must have been asked as soon as the first college was created. In many cases, the answer is, "Ask the students." In the United States, formal student evaluation of teaching as a measure of faculty teaching effectiveness seems to have first been introduced in the 1920s (Page, 1974). The use of evaluations started in a few colleges, including the University of Washington, Harvard, and Purdue. In 1935, the administration of Colorado State College of Education requested that each member of its teaching staff who taught a class of 25 or more students administer the Purdue Rating Scale for Instructors in one of these classes (Heilman & Armentrout, 1936). In 1949, Mueller (1951) surveyed all the colleges listed in the 1948-49 *Education Directory* and found that 29% of colleges implemented student evaluation in that year and another 7% had experimented with it before. Centra noted that by 1993 it was rare when an American college did not use student evaluation of teaching in one way or another (p. 47).

There has been no lack of literature related to student evaluation of teaching, and a variety of terms have been used to refer to the practice. These terms include student evaluation of teaching, student rating of instructors, student rating of instruction, student course evaluation, and so on. In this chapter, the phrase "student evaluation of teaching" and its acronym, SET, are used.

This chapter focuses on the current practices and issues facing SET. Specifically, this chapter consists of six parts: (a) context of student evaluation of teaching, (b) roles that research and analysis play in SET, (c) instruments for SET, (d) SET policies and procedures, (e) issues facing SET today, and (f) discussion and looking ahead. The appendix to this chapter provides links to some of the online SET software packages currently on the market. It is not the intent of this chapter to influence the reader on the value of using student evaluations of teaching, but to inform the reader about the issues and opportunities associated with the use of such evaluations.

In order to address the topics covered in this chapter, the following methods have been employed:

[1] Chickering and Gamson (1987) are among many individuals who have identified those practices of teaching that enhance student learning—and hence student success.

1. ***Literature review:*** A detailed review of the literature concerning SET was conducted. The review covers the evolution of SET, instruments used in SET, paper and online modes of SET, related research and studies, and so on. The literature review offers insight into how SET has evolved and its current status.

2. ***The SET survey:*** A survey of colleges and universities was conducted in spring 2010 in order to better understand current practices for SET. The results of this survey provide a sense of where SET is heading and how institutions regard it. Five hundred higher education institutions were randomly selected to take part in the survey from among the institutions with an identified function for research and analysis. Descriptions such as "institutional research," "institutional studies," "institutional effectiveness," and "data analysis," as listed in the 2010 Higher Education Directory, identified a research and analysis function. In April of 2010, 450 out of the 500 directors of these research and analysis arms of the institutions were invited through e-mail to participate in a short, five-item survey. The remaining 50 directors, one from each of the 50 U.S. states, were contacted by telephone. The five items in the survey, whether it was conducted by e-mail or by phone, addressed the following questions:

- What percent of face-to-face courses are evaluated online?
- How are the distance learning or online courses evaluated?
- Are the course evaluation results for individual classes or instructors shared with students?
- To what extent, or in what way, is the research and analysis office involved in course evaluation?
- What are the major challenges facing course evaluation at your institution?

In addition to the above questions, the following topics and issues, mainly about online course evaluation, were discussed in the phone survey with the directors of the 50 institutions in the subsample:

- instruments (survey forms) used for course evaluation,
- software packages used for online course evaluation,
- policies and procedures,
- response rates, and
- the office's role in the transition from paper to online course evaluation.

Three hundred and eighty-nine, or 78%, of the surveyed administrators responded, including 339 out of the 450 receiving a web survey and all 50 who were contacted by phone.

3. ***SET instruments:*** Fifty forms (i.e., questionnaires) for evaluating the instruction of the face-to-face courses and another 50 forms for evaluating the distance learning or online courses were collected either through the phone survey or from the website of

individual institutions. These forms were analyzed and compared with the commonly used forms in the 1970s and 1980s. This comparison gives additional perspective on how SET has changed, and also on current practices.

4. ***SET policies and procedures:*** The SET policies and procedures were collected from 50 institutions either through the phone survey or from the website of individual institutions. These policies and procedures were summarized and their common features were identified. The summary gives a perspective on how colleges and universities are managing SET.

Context of Student Evaluation of Teaching

The past century has witnessed the initiation and full development of student evaluation of teaching. Although it has been a topic of much debate, SET has become one of the major ways in which college instruction is evaluated. In 1993, Centra summarized SET development into the following four historical stages:

1. From the late 1920s to the 1950s, Hermann H. Remmers (professor at Purdue) and his colleagues at Purdue University carried out pioneering work in SET. They published the Purdue Rating Scale for Instructors (Brandenburg & Remmers, 1927) and conducted early psychometric analyses of the instrument.
2. In the 1960s, faculty voluntarily used SET for improvement purposes. The administrative use of SET, however, was not very frequent.
3. The decade of the 1970s was the golden age of research on SET. Studies were designed to answer such questions as: (a) does SET really measure teaching effectiveness? and (b) can SET help improve teaching? The generally favorable findings promoted the use of SET for tenure and promotion decisions, as well as for instructional improvement.
4. From the 1980s to the early 1990s, the continuing refinement of research findings and a series of reviews and meta-analyses substantiated findings on important issues related to SET. The relationship between student ratings and student learning, for instance, was analyzed across a wide range of studies, and more and more evidence indicated a positive relationship between student learning and student ratings.

The next stage, from the mid-1990s to the present, could be labeled as the period in which SET became driven by expanded applications of technology on campus; during this period, student evaluations began transitioning from being done on paper to online. In 2000, Hmieleski conducted a survey of 200 most wired institutions in the United States to investigate the use of the Internet for SET, and he found that 2% of colleges participating in the survey used a web-based, institution-wide SET system. In 2002, Hoffman (2003) found that 10% of the colleges in a survey of 256 institutions were using a campus-wide Internet system as the primary means of collecting SET data. Three years later, in 2005, the Faculty Center at Brigham Young University

conducted an extensive web search and communicated with more than 100 colleges about their SET efforts. Their research indicates that in 2005 about 16% of the 100-plus colleges had implemented campus-wide SET initiatives online (cited by Hess et al., 2005).

Current Status

The SET survey results indicate that as institutions headed into the 2011-12 academic year, the major event taking place in the evolution of SET was the transition from using paper forms to online evaluations. For face-to-face courses, 45% of participating institutions only used a paper form for the course evaluation, with the rest of the institutions evaluating some or all of their courses online. About one fourth (27%) evaluated almost all courses online, 10% evaluated more than one half of their courses online, 4% evaluated about one half of their courses online, and 14% evaluated less than one half of their courses online. Only one institution (0.3%) indicated that courses were not evaluated.

The survey data indicate that 76% (N = 296) of the participating institutions also offered distance learning or online courses. Of the institutions that offered such courses, 88% mainly used the online mode for their course evaluations, 6% used paper forms (either the paper forms were sent to students, or students filled out the forms when they came on campus at the end of a semester), and the remaining 6% of institutions didn't evaluate their distance-learning courses.

In addition, some of the institutions using paper forms were conducting pilot studies of online SET, and some were planning to start an online format of SET in the near future. However, change didn't always go in the same direction, toward online evaluations, during the 2011-12 academic year: One institution had used online SET for two years but went back to using paper evaluation forms due to the unsatisfactory nature of the online SET system and low response rates.

When asked whether the course evaluation results for individual classes or instructors were shared with students, 12% of the participating institutions said "yes," while 87% indicated "no." For the remaining 1% of institutions, individual instructors could decide whether they wanted their SET results to be disclosed to students.[2]

Roles That Research and Analysis Play in SET

What roles do research and analysis by the college play in the evaluation of instruction, and what kinds of evaluations have been done, and are now being done, with SET? Quite a few educators and researchers have addressed these issues. Saupe (1990) states that research underlies the improvement of instruction: procedures and specific instruments used in the evaluation of instruction, such as student rating-of-instruction forms, are selected or developed by means of

[2] Of course, websites on teacher ratings are proliferating, as well as websites ranking those websites (http://www.makeuseof.com/tag/4-great-sites-rate-review-teachers-professors/). The reader needs to be aware that this cloud-type rating is voluntary, with no reliability checks. Such ratings are at best suspect.

research; the evaluation of instructional methods and media is a process designed to lead to improvement and is guided by evidence from research. Volkwein conducted the National Survey of Institutional Research Offices in 2008 and included questions pertaining to SET. He concluded that if the institutional research office at a university reports to the chief academic officer,[3] the research office is usually heavily geared toward conducting research on the academic side of the institution, and this includes research into student evaluations of instruction.

Volkwein included "student ratings of instruction" as one of 89 institutional research activities. He found that this activity was centralized in 31% of the 1,113 institutional research offices participating in the survey. For 20% of the research offices, SET activity was shared with other campus offices, while the remaining 49% of institutional research offices participating in the survey were not involved in student rating of instruction (Volkwein et al., 2009).

Current Status

To what extent, or in what way, is the central research and analysis office at a given institution involved in course evaluation? The SET survey data reveal that in spring 2010, 14% of the offices participating in the survey were in charge of all course evaluation activities, 42% were partly involved, and the remaining 43% were not involved. Offices in the institutions with some or all of their face-to-face courses being evaluated online were more involved than those offices at institutions with only paper forms. For the institutions where there were some online forms for face-to-face courses, 16% of the offices were in charge of all course evaluation activities and 41% were not involved at all. For the institutions where there were only paper forms, only 11% of offices were in charge of all course evaluation activities, and 47% were not involved at all.

For the institutions where the central research and analysis office was partly involved in course evaluation, those offices' responsibilities are listed in Table 1.

Table 1. Activities in which the office was involved in course evaluation

Course evaluation activities	Percent of participating institutions where office is partly involved in course evaluation (N = 164)	Percent of institutions with some or all face-to-face courses evaluated online (N = 98)	Percent of institutions with all face-to-face courses evaluated on paper forms (N = 66)

[3] The same reporting structure is relevant to previously mentioned functions such as institutional effectiveness and those with the words "assessment" and "planning" in their names.

(a) Generating summary reports	75	63	94
(b) Conducting data analysis for research or planning purposes	68	79	50
(c) Distributing results	63	54	75
(d) Implementing course evaluations	55	54	56
(e) Serving as consultant	55	50	63
(f) Coordinating course-evaluation activities	50	42	63
(g) Participating in the development of course-evaluation questionnaires	43	46	38
(h) Serving on the course evaluation committee	23	38	1
(i) Serving as liaison	20	13	31
(j) Scanning course-evaluation sheets	6	1	13
(k) Other	5	5	5

Note. The activities under the "other" category include, among other things, conducting validity and reliability studies for SET instruments, running literature research and identifying benchmarks, and providing advice on interpreting SET results.

As Table 1 reveals, there were six activities in which one half or more of the research and analysis offices were involved. These activities were: (a) generating summary reports (75%), (b) conducting data analysis for research or planning purposes (68%), (c) distributing results (63%), (d) implementing course evaluations (55%), (e) serving as consultant (55%), and (f) coordinating course-evaluation activities (50%).

When the institutions that evaluated some or all face-to-face courses online were compared with the institutions that only used paper forms, the data indicate that offices in institutions with online evaluations were less involved in 7 of the 10 activities specified in Table 1 than the offices in institutions that used paper evaluations only. The three activities in which offices in the institutions with online evaluations were more involved were: (b) conducting data analysis for research or planning purposes (79% of offices in the institutions that evaluated some or all face-to-face courses online were involved, vs. 50% of offices in the institutions that used paper forms only); (g) participating in the development of course-evaluation questionnaires (46% vs. 38%); and (h) serving on the course evaluation committee (38% vs. 1%). The difference in the office involvement between the institutions that used an online mode of course evaluation and those with the paper forms may suggest that the transition from paper to online course evaluation shifted the research office's role from time- and energy-consuming activities such as generating and distributing reports to data analysis and information consultation.

If the SET survey data suggest that the transition from paper to online course evaluation has shifted the role of these offices, then what roles did they play during the transition? Out of the 50 institutions that were contacted in the SET phone survey, 27 institutions used online evaluations for at least some of their face-to-face courses, and 70% (19) of them had been

involved in the transition from paper to online course evaluation. In the typical case, a task force or committee was first established, and an office representative served on the committee. The committee usually consisted of the parties that were involved in the transition, or that would be involved in using the evaluations once they were online. These parties included representatives from academic affairs, the faculty senate, the faculty union, institutional research, IT, and the registrar's office. The committee in most cases was in charge of everything that was involved in the process of transition, from searching for a software package and conducting a pilot study to generating the final report and making recommendations. The time that the transition took for the 19 institutions varied; the phases lasted from as short as one semester to as long as three years.

Instruments for Student Evaluation of Teaching

What traits make up a good teacher? How do you measure the quality of teaching? These were the questions asked when the Purdue Rating Scale for Instructors (PRSI) was created in 1927. There was no uniformity of answers to these questions, but the authors of PRSI believed that a consensus might be possible with regard to one pertinent aspect of teaching: the student's reaction to the instructor. Thus, it was through student assessment of instructors' traits that PRSI sought to improve teaching (Stalnaker & Remmers, 1928).

The PRSI consisted of 10 traits (items) that were regarded as important in the personality and behavior of a good teacher. The 10 traits were: (a) interest in subject, (b) sympathetic attitude toward students, (c) fairness in grading, (d) liberal and progressive attitude, (e) presentation of subject matter, (f) sense of proportion and humor, (g) self-reliance and confidence, (h) personal peculiarities, (i) personal appearance, and (j) stimulating of intellectual curiosity. Students were asked to rate each trait on a line, a 100-point graphic scale. Three phrases were listed below the line for each trait to help the student think about how to rate the instructor on that point. For example, under the first trait, interest in subject, these three phrases appear: "Always appears full of his subject," "Seems mildly interested," and "Subject seems irksome to him."

During the next four decades, from the 1930s to the 1960s, the PRSI was revised both in content and scale. Meanwhile, a number of institutions created and used their own SET instruments. PRSI, however, seems to have been the most widely used and studied instrument during this period (Baker & Remmers, 1952; McKeachie & McKeachie, 1957; Miklich, 1969).

In the 1970s and 1980s, more and more SET survey forms or systems were established, including some that were commercially available. The fairly widely used instruments[4] during these decades include:

1. Instructional Assessment System (IAS), University of Washington, Seattle;
2. Instructor and Course Evaluation (ICE), Southern Illinois University;
3. Instructor and Course Evaluation System (ICES), University of Illinois, Urbana;

[4] Listed in alphabetical order.

4. Instructional Development and Effectiveness Assessment (IDEA) System, Kansas State University;
5. Purdue's Cafeteria System, Purdue University;
6. Students' Evaluation of Educational Quality (SEEQ), University of Western Sydney;
7. Student Instructional Rating System (SIRS), Michigan State University; and
8. Student Instructional Report (SIR; the revised version was called SIR II), the Educational Testing Services (ETS). (Centra, 1993)

These commonly used SET instruments contain multidimensional items that cover different aspects of instruction. Some instruments group individual items into dimensions based on psychometric and factor analyses. SEEQ (Students' Evaluation of Educational Quality), for instance, has nine dimensions: (a) learning/academic value, (b) instructor enthusiasm, (c) organization/clarity, (d) group interaction, (e) individual rapport, (f) breadth of coverage, (g) examinations/grading, (h) assignments/readings, and (i) overall rating. One or more global queries are often included to address the overall effectiveness of the instruction. Students are asked to respond to statements and questions such as, "Overall, I learned a great deal in this course," "Overall, how does this instructor compare with other instructors at this institution?," and "How would you rate the overall quality of this course?" These instruments often use 4- to 7-point scales and the survey forms can be scanned by machines.

The SET instruments discussed above are used for face-to-face courses. Regarding the instruments for evaluating the instruction of distance learning or online courses, Hess and her colleagues (2005) synthesized the existing instruments and suggested seven primary domains for student evaluation of online courses. Then they tested and analyzed these domains. The seven domains are:

1. online design and organization: aesthetics (course look and feel), accessibility, usability;
2. instructional design and delivery: clarity of objectives, organization of materials, utility of resources;
3. student assessment: clarity of assignments, integration of assessments with instruction, quality of formative feedback;
4. technological support: hardware requirements, software requirements, technical support contacts;
5. communications: flexibility of communication vehicles;
6. interactions: instructor and peer interactions, quality and quantity; and
7. student characteristics: technological capabilities and proficiencies, reasons for taking online course, time commitments.

Current Status

The 50 SET instruments for face-to-face courses collected from individual institutions vary in length and scope. Without counting the section on student and course characteristics, their length of core evaluation items ranges from 10 to 65 items. The majority of the instruments with 20 or more items group individual items into dimensions, and the dimensions more or less fall into categories similar to those of the SEEQ (Students' Evaluation of Educational Quality) discussed earlier. Of the 50 instruments, 46 (92%) are locally developed. The rest are standardized instruments that include the commonly used ones listed in the previous section. The usage of the instruments in the 50 institutions roughly falls into the following categories: (a) one form for all courses in the whole institution; (b) separate forms for different formats of courses (e.g., lectures, labs, seminars, etc.); (c) a standard core of required items, and individual departments or instructors can add their own items; and (d) items selected from a pool by individual departments or instructors.

All of the 50 instruments for online courses are locally developed. The majority of them are adapted from the instruments for face-to-face courses. The dimensions used in these instruments are similar to the domains that Hess and her colleagues identified.

In several instruments for face-to-face courses, there is an item that asks how many hours a week students spent in the course. Similar questions appear in the majority of the instruments for online courses. This "quantified" item was rare in the commonly used instruments in the 1970s and 1980s. Instead, an item was often used then that asked the time spent in one course as compared with the time spent in other courses.

SET Policies and Procedures

What are the purposes of SET? This is another area that has been widely studied and investigated. Two functions of SET have been often discussed. The first one is the formative function, that is, the evaluations are used for improving instruction. The second one is the summative function, that is, SETs are used for making personnel decisions (Algozzine et al., 2004). With regard to the purpose of instructional improvement, Marsh and Roche (1997) state that an instructor's raw scores on different factors (organization, enthusiasm, etc.) are not directly comparable, and that the use of norms helps teachers determine their strengths and weaknesses in comparison to other faculty. When it comes to using SET for making personnel decisions, d'Apollonia and Abrami (1996) suggest using general judgments of instructional effectiveness (e.g., exceptional, adequate, and unacceptable) rather than fine, precise ones.

Another function of SET, which is also often discussed, is to guide students in their selection of courses and instruction. This idea is not new. When course evaluation began at Harvard in the 1920s, the effort was actually led by students who wished to offer their fellow students help in course selection (Fidelman, 2007). However, the practice of using SET for such

a purpose has not been widely adopted. As the SET survey results indicate, only 12% of institutions shared SET data with their students in 2010.

The SET policies and procedures collected from 50 institutions reveal that institutions commonly take advantage of SET with regard to fostering instructional improvement and making personnel decisions. However, the use of SET in "guiding students in their course selection" is, logically, only found at the institutions where students have access to SET results. It should be noted that in some cases, such as in Texas, state law requires that public institutions post the SET results on their website.[5]

When it comes to implementing SET and disseminating the results, some guidelines were common across the 50 institutions. For instance:

1. All SET results should be anonymous.
2. The SET system, whether conducted on paper or online, should ensure that each individual student can fill out the form only once for one course or one instructor.
3. The instructor shouldn't be present in the classroom or site when students fill out either the paper or the online evaluation form.
4. The instructor shouldn't be the one who collects the paper forms after students complete them.
5. SET should end before grades are disclosed to students.
6. SET results shouldn't be disclosed to instructors before grades are submitted.
7. Student comments on the paper form should be typed (so that their handwriting cannot be recognized), and then only the typed results are shared with instructors.

How long should SET opportunities for a specific course be available for the student to rate the course? Paper evaluations are typically completed in class at the end of a course with the instructor not present. Online evaluations can be open for various lengths of time. At the 50 surveyed institutions, policies and procedures indicate that for term-long courses, SET is often available from two to three weeks. Several institutions use this method to determine the length of SET capabilities for the courses that end either during or at the end of the term: SET starts when 80% of the course is completed and ends before the final exam begins.

Is there a minimum enrollment for a course to be evaluated? The policies in most of the 50 institutions allow for courses with an enrollment of five or more students to be evaluated. At

[5] *Public Access to Course Information Website* (HB 2504). On October 29, 2009, the Texas Higher Education Coordinating Board adopted Chapter 4, Subchapter N, Sections 4.225-4.229, concerning Public Access to Course Information, required by House Bill 2504, 81st Texas Legislature. "Each institution . . . is to make available certain course information to the public on the institution's Internet Web site. . . . This information must be: Searchable by keywords and phrases; accessible to the public from the institution's Internet website without . . . user identification; and . . . updated . . . at least once for every semester in which the course is offered" (summarized from http://hb2504.txstate.edu/, example: http://www.ttu.edu/courseinfo/evals/).

most institutions, the same criterion applies for disseminating SET results: For the SET results to be shared with instructors, there should be a minimum number of five responses submitted.

Issues Facing SET Today

An increasing number of studies on the new way to do student evaluations has accompanied the emerging online mode of SET. Sorenson and Reiner (2003) identified some of the advantages to online evaluations: (a) savings in class time, (b) more flexibility in creating forms and reports, (c) better written comments by students, and (d) often less costs. They also identified the following challenges for online SET: (a) low response rates, (b) response biases as linked to low response rates, (c) comparability of online ratings with paper form ratings, (d) dependence on technology, (e) inconvenience related to online SET such as the log-on process and issues due to computer problems, (f) initiating, developing, and financing an online system, (g) anonymity and confidentiality, (h) data access (who should have access to the data?), (i) less control of the conditions under which students complete SET online (for instance, students may be influenced by peer pressure if they discuss their ratings with others before filling out their forms, or students who never attend class could go online and still fill out the forms), and (j) cultural change in the transition from paper to online SET. Sorenson and Reiner also provided advice for how to deal with these challenges. They suggest that colleges involve faculty and students in creating a flexible, secure system and then use various techniques and strategies to encourage higher response rates. Some of the strategies used to increase response rates are discussed in Enyeart and Ravenscroft (2009).

Questions of Reliability and Validity

While it is beyond the scope of this chapter to review research on the reliability and validity of student ratings, one issue specifically needs to be noted: the question of whether teachers will receive higher-scoring student evaluations if they give higher grades and less coursework. Centra (2005) wrote a monograph on this topic that summarizes much of the research. Centra concludes: "Teachers will not likely improve their evaluations from students by giving higher grades and less course work. They will, however, improve their evaluations and probably their instruction if they respond to consistent student feedback about instructional practices" (p. 28). Undoubtedly the discussion, debate, and research will continue.

Issues Identified in the SET Survey

Participants in the SET survey were asked to identify specific challenges facing course evaluation today. These challenges were grouped in categories. They include:

1. Challenges facing both online and paper-form course evaluation
    A. SET data do not automatically improve teaching and learning.

2. Challenges facing paper-form course evaluation

B. It takes too much time and too many resources for data collection and reporting back. Time-consuming tasks include scanning SET sheets, correcting errors, generating reports, and disseminating reports.

C. It's too time consuming to type all student comments from open-ended questions.

D. If student comments are scanned into image files, students' anonymity cannot be guaranteed because their handwriting could be recognized.

3. Issues in the transition from paper to online SET

E. It is necessary to have support from IT.

F. It's difficult to identify a SET software package.

4. Issues facing online course evaluation

G. The SET response rate is low.

Discussion of the Issues Identified in the SET Survey

Issue A under point 1 in the list above addresses the problem of determining how the SET data can be effectively used to improve teaching and learning. This concern was identified in the SET survey and is a much-discussed issue in the related literature. In fact, it seems to be an issue without a definite answer. Centra (1993) provides a model for improving teaching through formative evaluation. In his model, he suggests four conditions need to be met in order for improvement in teaching to take place. First, the teacher needs to have a period of self-reflection on the student feedback, and the self-reflection requires a great deal of thought about what one is doing and which practices might be improved. Second, the teacher should believe that the information he or she received has value and that the source is to be respected. Third, the teacher needs consultation with peers or experts on how to make improvement. Fourth, the teacher needs to be motivated to improve. Colleagues and administrators may all help teachers fulfill these conditions.

Issues B, C, and D reveal the inherent disadvantages of the paper-form SET: the process is time- and energy-consuming. There is no assurance of anonymity if responses to open-ended questions are scanned as images. If the responses are typed, it is too labor-intensive. However, one solution to issue B is possible: Some commercial software packages (e.g., Class Climate from Scantron) are capable of picking up data from hardcopy survey forms, processing the data, and then automatically sending reports to individual instructors.

Both Issues E and F are related to information technology (IT). The 2010 SET survey results indicate that the IT office can often help make a smooth transition to online evaluations if IT is involved from the very beginning. Decisions on which software package to use may depend on such factors as the current institution system, the SET budget, which office manages the SET system to be established, and so on. The SET resources listed in the appendix to this chapter include some of the software packages currently available on the market.

Issue G, low response rates from online SET, is also a much-investigated area (Enyeart and Ravenscroft, 2009). A number of educators and researchers have tested and made suggestions with regard to a variety of methods to promote response rates. Their suggestions include: make promotional efforts, offer incentives, use reminders, get support from faculty, communicate to students about the purpose of course evaluation, and so on. Any of these methods may help improve response rates to a certain extent, but none of them has been identified as very effective. Some methods, such as offering incentives, are even controversial. The low response rate, therefore, has remained a key issue facing online SET.

In the phone survey, participants were asked what their SET response rates were and how the response rates could be improved. The following summarizes the answers:

1. The response rates are close to 100% if SET is mandatory.
2. The response rates are around 80% if a link is set up between course grades and online SET. If a student has not filled out the online SET form, the system automatically leads the student to the online SET when he or she checks his or her grade. The student has the option to decline.
3. If four or more reminders are used, the response rates range from 40% to 60%.
4. If three or fewer reminders are used, the response rates range from 20% to 45%.

It should be noted that this response rate pattern is based on a small sample of 35 institutions, and there were outliers for some of the categories. In addition, the pattern is drawn without taking other factors into consideration. Nevertheless, the data may serve as a reference for institutions that are facing the issue of low response rates.

Discussion and Looking Ahead

The past century has witnessed the initiation and full development of student evaluation of teaching in American colleges and universities. Accompanying these evaluations have been voluminous publications on related issues. One major issue is validity: Do student ratings actually measure teaching effectiveness? To address this issue, numerous studies have focused on the relationship between student ratings and indicators of teaching effectiveness. A general agreement seems to have been reached that student evaluation of teaching is a valid tool for measuring teaching effectiveness. Marsh and Roche (1997) reviewed and summarized the related studies as follows: Under appropriate conditions, student evaluations of teaching are (a) multidimensional; (b) reliable and stable; (c) primarily a function of the instructor who teaches a course rather than the course that is taught; (d) relatively valid against a variety of indicators of effective teaching; (e) relatively unaffected by a variety of variables hypothesized as potential biases (e.g., grading leniency, class size, workload, prior subject interest); and (f) useful in improving teaching effectiveness when SET results are coupled with appropriate consultation.

The general agreement on the validity of student evaluation of teaching, however, does not suggest that the studies, or even the debate, on the topic will stop. Additional investigations

and studies will likely be conducted to further address online SET and comparison between the paper and online modes.

The online SET has been adopted by more and more institutions during the past decade. As discussed earlier, however, the major challenge for online SET has been the low response rate. Solutions to this challenge could include making the evaluations mandatory, using links from grade sites to encourage students to complete the evaluation before they get their grades, and nudging the student with reminders and requests.

The 2010 SET survey results also indicate that college research and analysis offices, often institutional research offices, can play an active role in the transition from paper to online course evaluation. The survey results also reveal that the transition may well shift these offices' roles from the time- and energy-consuming activities of generating and distributing reports to data analysis and information consultation. As the transition continues, research offices will continue to play an active role and then take on some new responsibilities after course evaluation is online. These responsibilities may include comparing paper-form SET data with online SET data, establishing benchmarks, helping with the effort in improving response rates, conducting validity studies or other related research, serving as a consultant for the institution's community, and more.

A recent development in higher education that has affected SET is an increase in enthusiasm for access, affordability, and accountability.[6] The focus of this political activity has been on increasing the amount of information available to the consumer about institutions while making the institutions more accountable. As a result, there has been a movement to increase the availability of student ratings. Texas House Bill 2504 concerning the public access to course evaluation results, as discussed earlier, is a typical example.

As was said at the beginning of this chapter, this chapter is not intended to take an advocacy position on the use of student evaluation of teaching. Its major purpose is to make the reader more aware of the issues and options available in the use of course evaluations. The ability to use these evaluations to improve teaching and to enhance student success, to a large extent, depends on the strategy of the college and the engagement of key groups in the process.

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[6] For a discussion of the trend toward increased accountability, see Conner and Rabovsky (2011).

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Appendix

Following are some of the online SET software packages currently on the market. They are listed in alphabetical order.

1. Blue/Evaluation by eXplorance: http://www.explorance.com/prod_evaluation.asp
2. Class Climate by Scantron: http://www.scantron.com/classclimate/
3. Digital Measures: http://www.digitalmeasures.com/CourseResponse/index.htm
4. EvaluationKit: http://www.evaluationkit.com/
5. Online Course Evaluations by Gap Technologies: http://service.onlinecourseevaluations.com/
6. Remark Web Survey by Gravic, Inc.: http://www.gravic.com/remark/websurvey/
7. SIR II by ETS: http://www.ets.org/sir_ii/about
8. SurveyDig by Runner Technologies: http://www.runnertech.com/surveydig_home.html

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Part 2

Supporting Student Retention and Graduation for Unique Groups and Needs

Studies conducted by many of the early researchers and thinkers about student success reveal that students are not a homogenous group of individuals. In fact they reflect a rich diversity of individuals with different demography, different goals, and different academic and social capabilities. And, this diversity continues to increase on our campuses. As we think of these individual students and work to build institutional capacity to meet their needs and enhance their opportunities for success, it is sometimes helpful to think of them within the context of their group membership. Understanding the typical needs, preparation, and expectations of a particular group or type of students often provides the institution with a head start in developing strategies to support an individual student from a particular group. Key is having access to sufficiently robust and accessible student data from which advisors, faculty, and researchers can identify unique student groups on their campuses and analyze the impact of programs and processes on these students' success.

In this second part of the *Sourcebook*, contributors discuss some of the unique student groups and subcultures that we have on many of our campuses. In addition, they discuss strategies that have been used to address the specific needs of these students.

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Unique Student Populations: Classifying Students and Describing Their Needs and Outcomes

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People who work in postsecondary education do so because they want to make a difference. And not just with some students—we want to meet the needs of all of our students so that each one has the opportunity to succeed. Because we are a community that is concerned with the success and growth of each student, we seek information about how groups of students are faring in our environment. Faculty, administrators, and support staff are best able to understand how and why students are succeeding when they collaborate to share information. The institutional research office is often at the center of these collaborations since its staff members collect data about students, know how to retrieve it from campus databases, and are experts in data analysis. Faculty bring disciplinary perspectives and experiences with students in the classroom and staff bring their experiences as support-service providers. Combining the expertise of these three points of view can guide assessments of programs and practices designed to meet students' needs and promote retention and graduation.

Often questions about students' needs and outcomes are couched in the language of group membership. In this chapter we will describe the issues that arise when we attempt to categorize students into groups, the higher education outcomes associated with groups, and types of analysis that provide insight into the sometimes complicated relationships between group membership and students' experiences.

Gender

Students report information about their gender on admissions forms. While there is no reason to believe that students regularly give incorrect information about their gender, some do not respond to requests for this information. Students who do not respond to questions about gender may be transgender persons who do not identify with the binary categories of male or female. Transgender persons may interpret the typical gender question as evidence that the institution does not acknowledge their existence (Schueler, Hoffman, & Peterson, 2009).

Services for and research on transgender persons is often combined with research on gay, lesbian, bisexual, and questioning students. The problems associated with combining these groups will be discussed in a later section of this chapter.

More women than men are enrolled in postsecondary education (Snyder & Dillow, 2010). Women are also more likely to complete degrees and earn higher grade point averages. Despite their overall greater likelihood of achieving positive outcomes, the lower participation of women in science, technology, engineering, and mathematics (STEM) majors is a subject of national concern (e.g., Rypisi, Malcom, & Kim, 2009). Attracting more women to these majors will likely require greater understanding of why qualified women find non-STEM fields more attractive (Riegel-Crumb, King, Grodsky, & Muller, 2012).

Retention research often focuses on the interaction of gender and ethnicity. African American, Hispanic, and Native American men are particularly under-represented in postsecondary education and have some of the lowest retention rates. Gardenhire-Crooks et al. (2010) concluded that a masculine identity that includes financial self-sufficiency and distrust of other men, combined with an environment of low expectations and negative stereotypes, may be factors in the lower rates of participation and success demonstrated by African American, Hispanic, and Native American men. Participation in athletics, which provides opportunities for both social and academic support, is associated with higher levels of retention for both African American and White males (Leppel, 2005-2006). Social integration behaviors, such as participation in activities and establishing relationships with supportive faculty, have been associated with Black male student success at four-year colleges (Bush & Bush, 2010). However, Wood, Hilton, and Lewis (2012) argue that the factors related to success for Black men at two-year colleges may be different. Harper and Harris (2012) described a wide variety of programs that have been designed to facilitate the success of Black male college students. They propose that Black male student success initiatives be held to eight standards including acknowledgement of racism and its harmful effects, research-based practices, including student input in the design of programs, and accountability for results.

Race and Ethnicity

Postsecondary institutions must collect information about students' racial and ethnic identification and report that information to the National Center for Educational Statistics (NCES) Integrated Postsecondary Educational Data System (IPEDS). Students are asked to report their racial and ethnic identification on admissions forms. These questions collect the information needed to meet the federal reporting guidelines, but institutions can ask for more detailed information than required for IPEDS reports.

IPEDS Race/Ethnicity Collection and Reporting Categories

In October of 2007, the Department of Education issued final guidelines for collecting, maintaining, and reporting racial and ethnic data effective 2010. These guidelines established how racial and ethnic (R/E) data are reported in IPEDS after 2010-2011. By default, the near-universal adoption of IPEDS definitions by nonfederal surveys means this change affected nearly every collection and analysis utilizing racial/ethnicity categories.

Prior to 2010, IPEDS used a one-question format that asked students to check one of five race/ethnicity (R/E) categories. This question was replaced by a two-question format that separates the concepts of race and ethnicity. The two-question format is required without exception. The first question (ethnicity) asks whether the respondent is Hispanic or Latino or is Not Hispanic or Latino. The second question (race) asks the respondent to select one or more races from five racial groups. It is critical that the format of the questions provide the opportunity for the respondent to answer *both* questions.

Categories for reporting R/E before and after 2010 are reported in the chart below.

Pre-2010 IPEDS Reporting Categories	2010 IPEDS Reporting Categories
1) Non-Resident Alien	1) Nonresident Alien
2) Race and Ethnicity unknown	2) Race and Ethnicity unknown
3) Black, non-Hispanic	3) Hispanics of any race
4) American Indian/Alaskan Native	For non-Hispanics only:
5) Asian/Pacific Islander	4) American Indian or Alaska Native
6) Hispanic	5) Asian
7) White, non-Hispanic	6) Black or African American
	7) Native Hawaiian or Other Pacific Islander
	8) White
	9) Two or more races

Some colleges have observed increasing numbers of students who do not respond to questions about R/E. Ward, Gilbreath, and Northrup (2010) conducted a survey to better understand students' reasons for not responding to R/E questions. They found that data entry errors accounted for some of the missing information, but that students also expressed concern about how the information would be used. Some students resented being classified by race or found they could not describe themselves using the categories on the admissions form.

Using Race/Ethnicity as a Variable in Postsecondary Research

Demographers predict that the number of Black or African American, Hispanic and Asian/Pacific Islander students enrolled in higher education will continue to rise. According to NCES (Synder & Dillow, 2010), among undergraduates enrolled in 2008 12.9% identified

themselves as Hispanic, 6.8% as Asian/Pacific Islander, and 13.9% as Black or African American. The percent of students who identified themselves as American Indian/Alaskan Native has remained stable for the past decade at 1.1%. Carnevale and Rose (2004) pointed out that Asian students are over-represented at the most selective colleges and that African American and Hispanic students are under-represented. Graduation rates vary across ethnic groups. According to NCES (Synder & Dillow, 2010), the six-year graduation rate for students who first enrolled in four-year schools in 2001 was 67% for Asian/Pacific Islanders, 60% for Whites, 48% for Hispanics, 42% for Blacks, and 39% for American Indian/Alaska Natives.

Sorting students into broad racial categories can mask differences within groups that may be important in delivering effective services. For example, students who might select "Black or African American" vary in social class, academic preparation, and immigrant status. According to Walpole (2008), these differences within the Black group affect the amount and types of cultural capital students bring to higher education, the experiences they have while they are enrolled, and the outcomes they experience after graduation. Research aimed at identifying ways to improve the educational outcomes for students may be more useful if subgroups within the standard racial and ethnic categories are identified and services are provided to meet their specific needs.

Parent Characteristics: Educational Level and Income

Research on student participation in higher education demonstrates that students who are described as low-income or as the first in their family to attend college are less likely to enroll in postsecondary education or to complete credentials (e.g., Bowen, Chingos, & McPherson, 2009). The Pell Institute for the Study of Opportunity in Higher Education releases regular reports on issues related to the academic success of low-income and first-generation college students (http://www.pellinstitute.org/), and low-income status is commonly included in research on higher education outcomes.

First-generation college students are often defined as those whose parents did not graduate from college. Adelman (1999) counseled caution in relying on students as a source of information about parents' education. He found that students were most likely to accurately report that a parent had attended college and were less likely to know if the parent had completed a degree. Yet student-reported information on parental educational level is regularly used as a measure of this variable.

Some research suggests that student outcomes might vary depending on the intensity of the parents' college experience. Using data from the Beginning Postsecondary Students 1990-2001 survey conducted by the National Center for Educational Statistics, Cumming (2009) identified three categories of intensity of parents' education (at least one parent had a four-year degree, one or more parents attended college, neither parent attended college) that proved useful in differentiating community college students' outcomes on a broad variety of academic and psychosocial outcomes.

An alternative to describing each student's income is to describe the income for an institution. Borden and Cruce (in Smith, Miller, & Bermeo, 2009) used census track data to identify community colleges that served large numbers of low-income students. These data were used to identify Texas community colleges that achieved higher than expected transfer rates for low-income students. Some researchers have used the concept of social capital to describe students' SES. Social capital includes not only the students' parents' SES, but the attitudes of student peers and others in the community toward postsecondary education (Wells, 2008-2009).

Receiving a federal Pell grant has become a proxy measure for low income. Using it as a metric is preferred over student reports of their family income because it is based on information supplied by families and is readily available without additional data collection. However, using Pell eligibility as a measure of income likely underestimates the number of low-income students at the institution because some low-income students do not complete the Federal Application for Student Financial Aid (e.g., Gardenhire-Crooks et al., 2010).

Pell recipients have been found to be "at risk" for leaving college without a credential. According to Pell Institute studies, low-income, first-generation students are more likely to be older, female, non-White, nonnative speakers, financially independent, and single parents. They are also more likely to have a disability, to have earned a high school equivalency diploma, to have delayed entry into college, to attend a college closer to home, and to attend part time and work full time while enrolled (Engle & Tinto, 2008). Since students who receive a Pell grant are less likely to earn a credential than students who do not receive these grants, researchers such as Long and Riley (2007) have argued that the grants need to be large enough to meet students' total financial need.

The Pell Institute has suggested that the retention and degree completion of low-income college students could be improved by making sure low-income students participate in first-year programs such as summer bridge and orientation; by monitoring student performance; by providing academic support through services such as supplemental instruction, learning communities, and tutoring; by using cooperative and problem-based learning to engage students in the classroom; and by establishing a culture of commitment to the success of low-income students (Engle & Tinto, 2008).

Academic Preparation

Judgments about a student's level of academic preparation are based on high school grades and entrance tests or after admissions through placement tests. Underprepared students are students who are considered at risk for academic difficulty because they have not demonstrated the levels of basic skills in reading, writing, and/or mathematics that are believed to be necessary to succeed in the institution's curriculum. The identification and treatment of underprepared students is one of the most controversial issues in higher education (e.g., Kozeracki, 2002; Perin, 2006; Goudas & Boylan, 2012).

At highly selective colleges where a small number of relatively underprepared students are admitted, support program staff may be asked to develop strategies for tracking students and evaluating the outcomes of support programs. Some popular support programs—for example summer bridge, writing centers, tutoring, and supplemental instruction—are designed to serve both underprepared and fully prepared students. Procedures for recording which students are using the services are necessary for determining if underprepared students are participating and benefiting. Developing these procedures can be challenging and requires collaboration between support program personnel, technology personnel, and institutional researchers (e.g., Deese, 2009).

At less selective colleges and universities the issue of academic preparation takes on much greater significance. These institutions may offer or require placement testing in reading, writing, and mathematics to all students or those who score below a criterion score on a college admissions test. Program personnel typically make decisions about test selection and cut scores based on their knowledge of the curriculum. In some states, legislatures have mandated both the test and cut scores that are used for placement (Perin, 2006).

Students who score below the cut score on a placement test are typically placed in a pre-college level skill development course that does not carry college credit. The courses count toward determining full-time enrollment, and can be paid for using financial aid, but do not count toward a credential (a certificate or degree). At most institutions pre-college level courses are referred to as developmental education (DE) courses, though they are sometimes described as remedial courses in higher education research. The most frequent placement recommendation is for developmental mathematics, followed by reading and writing (e.g., Bahr, 2007, 2008). Regardless of institution type, the decision to recommend placement into DE courses should be recorded. Recording the recommended placement allows the institution to track the extent to which students follow their placement recommendations, and compare the success of students who do and do not enroll in recommended DE courses.

Bailey, Jeong, and Cho (2010) suggested that community college students may respond to the prospect of DE by avoiding assessment, not following placement, not enrolling in any DE course, skipping courses in the DE sequence, not completing the sequence, or not completing the college level course associated with the DE placement. Bailey et al. studied 257,000 students enrolled in 57 community colleges during 2003-2004. They found that 30% of students recommended for DE did not take a DE course and that another 10% did not take the recommended course. Among the non-DE takers, 42% did not earn a college credit during the three years of the study.

Multi-institutional studies of the effectiveness of DE have reached conflicting conclusions. Bahr (2008) found that DE completers were as successful as students who were never referred to DE at completing target college-level courses. Moss and Yeaton (2006) arrived at the same conclusion for students who took developmental English. A study by Bettinger and Long (2005) of Ohio college students took advantage of the fact that schools used different cut scores on the same test to place students in DE courses. They compared the outcomes of students

with the same test score who either were or were not placed in DE, a procedure described as discontinuity analysis. They found that students close to the cut score who took DE courses had slightly more positive outcomes, including an increased likelihood of successfully completing degrees. Other studies that have used discontinuity analysis to examine the outcomes of students close to the cut score (Calcagno & Long, 2008; Martorell & McFarlin, 2007) suggested that participation in DE courses does not contribute significantly to long-term college outcomes. Goudas and Boylan (2012) point out that remediating skills contributes to success for students who are highly underprepared. These studies suggest that scores on placement tests should not be the only criteria used to mandate placement in developmental courses.

The Lumina Foundation has provided significant support for an initiative to increase the number of students who earn credentials from community colleges. Called Achieving the Dream: Community Colleges Count, the initiative has encouraged a "culture of evidence" to stimulate research on practices that enhance the outcomes of low-income students and students of color (Rincones, Voorhees, Glover, & Manning, 2009). The effectiveness of developmental education has been identified as a major influence on the outcomes of community college students. The Lumina Foundation has provided support for community colleges to develop alternatives to traditional remediation programs. The results of these efforts are described on the Achieving the Dream website, achievingthedream.org. Programs associated with improved course completion and retention include student success seminars, faculty training, and changes in grading policies (http://www.achievingthedream.org/results/colleges).

Immigrants and Nonnative Speakers of English

Students who are not native speakers of English can vary widely in their citizenship status, years enrolled in U.S. education, and scores on college entrance tests. Nonnative speakers of English can represent dozens of languages and be of any race. They vary in their preparation for college and socioeconomic class (Kim & Diaz, 2013). Some immigrant students have missed years of formal education and are educationally underprepared in many academic subjects. Others received excellent preparation for postsecondary education in their native country and adjust to college with minimal support. International students and immigrants often receive support through separate programs.

Information about a student's national origins and language background can be collected during the admissions process or during orientation. These questionnaires typically ask students if they were born outside of the United States and, if so, their age at immigration, if they are U.S. citizens, if they spoke English in their home, if either or both of their parents were foreign-born, and about their parents' education. Students may also be asked to identify the country where they or their parents were born. This information can be used to recommend students for academic and social support programs.

Immigrant status has been operationalized in several ways. For example, in Massey, Mooney, Torres, and Charles's (2007) study of Black immigrant and native students in selective

colleges, students with at least one foreign-born parent were defined as immigrants even if they had lived in the United States their entire lives. In their review of research on immigrant students Kim and Diaz (2013) differentiated immigrant students from international students because immigrants intend to live in the United States permanently. Conway (2010) distinguished between students who were foreign-born and attended a U.S. high school, foreign-born and did not attend a U.S. high school, and those born in the United States to foreign-born parents. She found differences between the three groups on measures of academic success and psychosocial development. Research on immigrant students suggests that strategies colleges use to improve academic outcomes for native students don't necessarily work for immigrant students. Tinto's (1993) theory of retention, one of the most influential theories in higher education, suggests that social integration is important for retention. Strategies such as living on campus help native-born students create a strong identification with the institution. Research on immigrant students suggests that maintaining a connection with their families and immigrant communities is associated with retention (cf. Tinto, 2006-2007; Kim & Diaz, 2013). Stebleton, Huesman, and Kuzhabekova (2010) found that immigrant college students at six research universities reported lower levels of sense of belonging and satisfaction compared to their native peers. Kim and Diaz (2013) conclude that immigrant students undergo a complex transformation during their college experience, and that future research should focus on how these transformations lead to college success.

Transfer Students

Transfer students are a frequently overlooked part of the student body because institutions are typically not held responsible for their outcomes. However, this lack of accountability may be changing as increased sharing of data about students' academic careers across institutions becomes available through exchanges such as the National Clearinghouse. Institutions are increasingly interested in the outcomes of former students who transfer out, as well as the outcomes for students who transfer in.

The traditional route of the transfer student has been the "community college transfer." Students spend two years at a community college, earn their associate's degree, and then transfer to a four-year institution to earn their baccalaureate. Transfer out is an important outcome measure for community colleges. This pattern is referred to as "vertical transfer" (VT). Enrollment in two-year degree-granting postsecondary institutions has increased dramatically from 2.3 million in 1970 to 6.6 million in 2007, with projected enrollments reaching 7.5 million by 2018 (Planty et al., 2009). Increases in the successful preparation for transfer of two-year college students could place significant strains on the resources of four-year schools.

Though significant, this traditional transfer route (VT) represents only about 43% of all the transfer students enrolled in four-year institutions (Grites, 2004). The largest group of transfers to four-year institutions is from other four-year institutions, often referred to as "lateral transfers" (Kirk-Kuwaye & Kirk-Kuwaye, 2007).

A new twist on "transfer" is researchers' awareness of the increasing complexity of postsecondary enrollment patterns. Students are more likely now to attend multiple institutions simultaneously, which is called "dual enrollment," and/or to alternate between them (Kearney, Townsend, & Kearney, 1995). First among these complex enrollment patterns is the idea of "swirling" or "double-dipping" (Adelman, 1999, 2006; McCormick, 2003). This pattern is defined as students who "start in either a four-year college or community college, and move back and forth between them for at least one cycle, accumulating more than 10 credits from both sectors in the process" (Adelman, 2006, p. 64). Peter and Cataldi (2005) found that nearly 47% of bachelor's degree recipients who began in four-year institutions had attended another institution at some point in their college careers—with or without formally transferring. In addition, though to a smaller extent, "reverse transfer"—students transferring from a four-year institution to a two-year one—has also been observed (Moltz, 2009). Much of our understanding of these complex enrollment patterns has been the result of several national longitudinal studies conducted by the National Center for Educational Statistics (e.g., NELS 88/2000).

Though the number of transfer students enrolled in higher education makes up a large proportion of undergraduate enrollment across all types of institutions, relatively little is known about their recruitment, admissions, or factors related to their success (Kippenhan, 2004; Handel, 2007) as compared to those who graduate from their first "native" institution of entry. From the studies that have been conducted, it does seem clear that total number of transfer credit hours, transfer GPA, type of college last attended, and academic adjustment (post-transfer GPA, earned credits) influence first-year retention in the post-transfer institution (Luo, Williams, & Vieweg, 2007). On average, multi-institutional transfer or dual enrollment is associated with poorer persistence rates and, among graduates, longer average time to completion (Peter & Cataldi, 2005).

Transfer research has primarily focused on VT students with a heavy emphasis on the area of "transfer shock" (TS) (Ishitani, 2008; Keeley & House, 1993). Transfer shock is the observed decrease in academic performance (traditionally measured as the difference between first-term GPA and transfer GPA) after transferring to a four-year college. Keeley and House (1993) found that students who transferred from public community colleges experienced more transfer shock than students who transferred from other types of institutions. Students of color also experienced more TS. Students' area of study varied widely in terms of the GPA decrease. The concept of TS has been broadened to also examine how transfer students adjust in terms of their academic and social environments (Laanan, 2007). Terris (2009), based on analyses of NSSE national results, found that transfer students are less likely to engage in high-impact activities (e.g., study abroad, internships, capstone courses, etc.) that have been shown to be related to student success. In general, they found all types of transfer students reported lower engagement compared to native students, but this was particularly pronounced for the "classical or vertical" transfer students. Kirk-Kuwaye and Kirk-Kuwaye (2007) compared VT to LT on levels of engagement during the first semester of enrollment and found both groups had lower

levels of engagement compared to native students, though they found LT students had lower levels of engagement than their VT counterparts.

The study of transfer students, especially those from community colleges, has diversity and equity implications beyond the study of this particular subgroup. Dougherty and Kienzel (2006) analyzed two national data sets and found that community college students with higher SES backgrounds were far more likely to vertically transfer than those from lower SES backgrounds. In part this was related to higher levels of academic preparations and higher educational aspirations. This finding has significant implications for diversity in four-year colleges and universities. Given that community colleges are often viewed as a vehicle for baccalaureate attainment for low-income and minority students (Grubb, 1991), these findings are especially problematic. Recent economic trouble has further restricted access to some public colleges (Shulock & Moore, 2005). For example, budget cuts in California forced the University of California and the state university system to cut their transfer capacities precisely at the time when access to higher education for low-income and minority students was needed the most (Keller, 2009).

Research suggests that transfer access to elite private four-year campuses is decreasing; from 1984 to 2002 the number of transfer students decreased from 10.5% to 5.7% (Rogers, 2006). In part, this is due to a focus on developing better new freshmen profiles, resulting in higher retention rates and therefore less opportunity for transfers to fill those spots.

The classical vertical transfer student represents 40% of all transfers on four-year campuses. Clearly understanding the various "flavors" of transfer student groups is critical to understanding their needs and for developing the diverse specific programming to meet those needs.

Student Veterans

It is been estimated that more than 555,000 current or former military personnel are participating in postsecondary education (Sander, 2012). They are enrolled at every type of postsecondary institution and in both undergraduate and graduate programs. The numbers of former military personnel enrolled is expected to rise as the size of the military decreases. Significant increases in educational benefits for current and former military personnel and their dependents are expected to encourage enrollment in postsecondary education.

One of the challenges in studying current and former military personnel's participation in postsecondary education is defining who they are. Vacchi (2012) has proposed that the term "student veteran" be used to describe these students. He defines student veterans as "any student who is a current or former member of the active duty military, the National Guard or Reserves regardless of deployment status, combat experience, legal veteran status or GI Bill use" (p.17). This definition implies that institutions that wish to collect information about student veterans ask students if they are or have ever been a member of the active duty military, National Guard, or reserves rather than asking if the student is a veteran.

In 2009 the National Center for Educational Statistics (NCES) published a study of undergraduate student veterans based on students enrolled in 2007-2008. The study estimated that 3% (660,000) of undergraduates were veterans. About 329,000 of those used veteran's educational benefits. This study was intended to provide a comparison for future cohorts of veterans that were expected to enroll as enhanced veteran's benefits rolled out in the fall of 2012. The NCES study did not include graduate or professional school students, nor did it explicitly include National Guard members in its definition of student veterans.

Because information about which students are student veterans has not been reliably collected in the past, their retention rates and graduation rates are unknown. The American Council on Education has called on postsecondary institutions to begin tracking student veterans so that the effectiveness of programs that exist to serve them can be assessed (cf. O'Herrin, 2011). Vacchi (2012) argues that because we know so little about the retention and graduation of student veterans, scholars have exaggerated the problems student veterans face transitioning to college when in fact they transition as effectively as other student groups and should be expected to be retained and to graduate at higher rates than the general student population. A survey conducted by Department of Veteran Affairs suggested that 68% completed the training they received with GI Bill support (Cate, 2013).

Postsecondary institutions responded to the increase in student veterans with a variety of services designed to support a successful transition, retention, and graduation (Cook & Kim, 2009). Some of the services focus on helping the student negotiate the Veteran's Administration bureaucracy (Ackerman, DiRamio, & Garza Mitchell, 2009). Other services are intended to ease the transition from a military role to a student role (Rumann & Hamrick, 2010). Institutions near military bases also focus on helping students leave for deployments and return to college multiple times (Ackerman et al., 2009; Ford, Northrup, & Wiley, 2009). O'Herrin (2011) recommends that institutions designate a point of contact for student veterans, provide an orientation to the institution early in the term, consider creating learning communities for student veterans, and be sensitive to language around disabilities since injured student veterans may see themselves as wounded and not disabled. Finally, all scholars agree that student veterans should be viewed as a campus asset rather than a problem.

Disabilities

According to the National Center for Educational Statistics, 11.3% of college students reported having a disability in 2004 (Horn & Nevill, 2006) compared to 6% in 1996 (Horn & Berktold, 1999). Among students with disabilities, the most commonly reported were orthopedic conditions (25%), mental illness or depression (22%), health impairments (17%), attention deficit disorder (11%), and specific learning disabilities (7.5%) (Horn & Nevill, 2006). Some students who are diagnosed with disabilities in K-12 do not seek disability status in college. Students who are granted disability status may receive a variety of accommodations including

exemptions from course requirements, special arrangements for taking course examinations, use of assistive technology, and tutoring services (Getzel, 2008; Madaus & Shaw, 2006).

Research on the outcomes of students with disabilities suggests that they are less likely to enroll in college than their peers without disabilities and more likely to enroll initially at a two-year college (Horn & Nevill, 2006). Some research suggests that students with disabilities are less likely to be retained compared to nondisabled peers (Getzel, 2008). However, Ponticelli and Russ-Eft (2009) found that students with disabilities who enrolled in California community colleges transferred at about the same rate as students without disabilities, and that the best predictors of transfer were proportion of courses completed and proportion of courses from the transfer curriculum.

One of the fastest-growing segments of the population of students with disabilities may be "learning disabled" (LD) students (Sparks & Lovett, 2009). LD students present challenges to disabilities support staff to establish agreed-upon criteria for determining their disability status. Sparks and Lovett (2009) pointed out that the methods and standards used to determine students' status vary across institutions and are often based on clinical judgment. Madaus and Shaw (2006) suggested that this variability is likely to increase as students whose disability status was determined by the 2004 revisions to the Individuals with Disabilities Act enter postsecondary education, since this law gave K-12 schools more latitude in selecting the methods they use to classify a student as LD.

As the number of college students with disabilities increases, reporting requirements will become more rigorous and analysis of student outcomes of students with disabilities will become more critical. Recently IPEDS has begun this process by requiring institutions to report the percentage of undergraduate students enrolled in disability services. Institutional researchers will need to partner with disability services staff and campus disability committees to identify students, assess the campus climate for students with disabilities, and track their educational outcomes.

Gender Identity and Sexual Orientation

Students whose gender identities differ from their biological sex or who do not express their gender in the usual way are described as transgender (Marine, 2011). According to Marine (2011), recent surveys have found that about 0.2% of college students describe themselves as transgender. In their review of the sparse empirical research on transgender students, Dugan, Kusel, and Simounet (2012) reported that students experience harassment and experiences with discrimination from both peers and staff. Using the results of the Multi-Institutional Study of Leadership they identified 91 transgender-identified students who responded to a variety of questions about campus climate and leadership experiences. Transgender students reported more negative perceptions of campus climate and lower educational outcomes compared to GLB (gay, lesbian, bisexual) or heterosexual students (Dugan et al., 2012).

One of the problems Dugan et al. (2012) reported in their research was a relatively large number of respondents who falsely identified themselves as transgendered. Their description of the process they used to identify the false responses is useful for other researchers who which to study this population of students.

Marine (2011) reports that one area of ongoing activism for transgendered students is gender-neutral housing, bathrooms, and application forms. Forms that ask students an open-ended question about gender identity are less offensive than closed questions that provide only two response options: male or female.

Campus surveys do not generally ask students to disclose their sexual orientation and many gay, lesbian, and bisexual students are not publicly out. Marine (2011) suggests using BGL, an alphabetical acronym to represent this group without implying that one is more important than the other. Surveys of campus climate, that target GLB issues reach these students by handing out surveys at settings and events that attract GLB participants. The participants are sometimes asked to give copies of the survey to their acquaintances, a procedure called snowball sampling (see, for example, Brown, Clarke, Gortmaker, & Robinson-Keilig, 2004).

Most research on GLB students has focused on their identity development, perceptions of campus climate, and experiences in residence halls (Longerbeam, Inkelas, Johnson, & Lee, 2007). Less is known about their academic experiences. Longerbeam et al. (2007) conducted a secondary analysis of the National Study of Living-Learning Communities that asked students to report their sexual orientation.

They found that gay men differed from heterosexual men in the activities they chose (more arts and politics; less sports and video games) and in their perceived intellectual growth (higher for gay males). This study suggests that researchers might find it useful to look beyond campus climate as they investigate the experiences of GLB students at their institutions.

Other Groups of Students

In addition to the above categories, students can be aggregated based on factors such as religious affiliation, geographic origin, enrollment in specific courses, college major, living on campus, and participation in athletics or other activities. At our own institution we have found that students from our neighboring states are less likely to persist (they transfer to a college that is closer to home), students who use the recreation center are more likely to persist and graduate, student athletes are more likely to graduate, and that students earning more than two grades of W, (the grade assigned when a student withdraws from a class after the second week of the term) have a lower probability of graduating. Studying unique student groups can be especially useful in developing a nuanced understanding of retention and graduation at an institution and further enhance the effectiveness of services designed to support student success.

Analysis Strategies That Capture the Information Associated with Categorical Classifications

There are a number of tools that researchers use to determine if membership in a particular subgroup is associated with various outcomes of interest or, conversely, what predicts group membership. Analyses of academic outcomes are the most common (i.e., credits completed, GPA, retention, and graduation). Other outcomes can vary greatly and can often be difficult to operationalize and collect data on; these other outcomes range from community and civic engagement, to student development and learning, to job placement.

There are a number of statistical techniques readily available in most desktop statistical packages that allow researchers to incorporate and simultaneously control the "usual suspects" list (e.g., gender, race, income, and academic preparation), while estimating the unique effects of group membership on the outcome of interest. Regression techniques are excellent tools for assessing these relationships. Common methods such as OLS multiple regression are appropriate when the outcome is continuous in nature, and logit, or multinomial logit regression when the outcomes are discrete categories (see Chapters 3 and 5, Coughlin Ed., 2005, for more details). Unique subpopulations can be easily incorporated into the models by coding a "dummy variable"—this type of variable has only two values, a 0 and 1. In the case of underrepresented minorities, a value 1 would be assigned to anyone who was defined as an underrepresented minority (e.g., Black/African American, Hispanic, or Native American); all others would be assigned a value of 0.

OLS regression interpretation is fairly straightforward, but often the outcome of interest is an outcome with discrete categories (e.g., graduated or not, dropped out vs. graduating in four years vs. six years, etc.). OLS techniques are not well suited for this type of analysis. Logit models are designed for modeling these types of outcomes, but interpreting these models can be more difficult compared to OLS. Conducting logit models is well covered in other sources; what we outline here is an attempt to illustrate how these models can be presented and discussed in nontechnical terms that convey the complex relationships underlying student outcomes in a way that is easily understood and at the same time not misleading.

Example: Providing Information for the Board of Regents on Retention and Graduation

Senior academic officers regularly report student retention and graduation outcomes to their governing boards. Institutional researchers are called upon to provide data for these reports and to assist the academic officers as they create effective reports. One of the challenges in preparing these reports is to present complex information using verbal descriptions of the findings and their relative importance, along with graphics that illustrate the relationships between variables reflected in the data.

For this report, the outcomes of interest were first-year retention and six-year graduation rates for the entering freshmen cohort of 2002. IR pulled this information from the student

database and used logit regression to determine student group factors related to the outcomes. Seven types of student variables were identified for the analysis: academic background, first-term performance, demographics, geographic origin, social integration, and financial aid. These student variables were selected because research in higher education suggests they affect retention and graduation outcomes in higher education, and they reflect concerns of the board. What follows is the text provided to academic officers to prepare them to deliver the report.

Results

Our models incorporated a number of academic background factors known or theorized to be related to retention and graduation. Surprisingly, students' ACT composite test scores do not seem to be associated with the retention/graduation outcome after controlling for other important factors. But, resources available to students matter as first-generation college students are less likely to graduate in six years. Congruence between student's academic ambition and institutional opportunities also matters. Students who are admitted to their first-choice college (or major) are less likely to drop out, and those who are highly prepared for college are more likely to be successful than those who are not (e.g., bringing in AP credits is shown to increase the likelihood of being retained and graduating in six-years). Conversely, students enrolled in a remedial math course in their first semester are more likely to drop out or to take longer to graduate when successful.

First-term academic performance is critical and has been consistently shown to be highly associated with student success, no matter how it is defined. Students who do not complete their courses, or who earn more Cs, Ds, and Ws during their first-semester are less likely to be retained and are less likely to graduate in six years.

Underrepresented minority status (Blacks, Hispanics, and Native Americans) does not appear to be related to retention but does appear to be related to decreasing the likelihood of graduation. Asian students are more likely to be retained into their second year and are more likely to graduate. Preliminary analysis suggests that where students come from may affect their likelihood of success at the university. Students from outside the state are more likely to drop out than they are to persist.

As hypothesized by Tinto (1993), factors related to social integration are associated with higher success likelihoods. Living on campus and participating in living-learning communities their first semester has been demonstrated to increase the likelihood of success both for one-year retention and six-year graduation rates.

Evidence is emerging which suggests that on-campus employment/work study, while unassociated with likelihood of success, is associated with more timely graduation. For example, students working on campus their first semester require fewer semesters to graduate.

While early evidence at our institution discounted the impact of financial aid, recent studies suggest that financial aid is associated with student success in important ways. Student loans appear to be working at cross-purposes of institutional retention goals, as first-semester

borrowing decreases success. Merit aid, while controversial, appears to support the institution's retention and graduation goals.

Graphical Representation of Models

While bar graphs are standard devices for representing data in reports, presenting the results of logit regression modeling can be challenging. Graphics such as arrows to indicate a statistically significant relationship and the direction of the relationship between the predictor and the outcome can make relationships more visible. The color of the arrow can be used to indicate the significance of the relationship. The example below represents the results of the analyses described above. Additional methods for utilizing regression models to highlight findings include creating profiles, i.e., calculating the success rate for typical or average students and then comparing those rates to those developed by altering the independent variables one by one. For a more complete description and examples see Radcliffe, Huesman, Kellogg, & Jones-White (2009).

Graphical summary of retention and graduation models

Categories	Predictors	Binary Logit Model 1 Year Retention		Binary Logit Model 6 Year Graduation
Academic Background	Composite ACT Score			
	First Generation			▼
	First Choice College	△		
	AP Credits	▲		▲
	Remedial Course			▼
First-term Performance	Course Completion Ratio	▲		▲
	C Count	▽		▼
	D Count	▼		▼
	W Count	▼		▼
Demographic Characteristics	Female	▽		
	Asian	△		
	Underrep. Minority*			▽
	Student Athlete	▲		▲
Geographic Origin	Out-of-State	▽		▽
	Reciprocity State	▼		
Social Integration	On-campus Housing	▲		▲
	Learning Communities	▲		▲
	Work Study			
	Campus Employment			
Financial Aid	Unmet Need	▼		▽
	Merit Only (Admissions aid)	▲		▲
	Loan Only			▽

* Black/African American, Hispanic, or Native American

Note. The color of the arrow reflects the level of statistical significance:

Black = p<.0001

Gray = p<.05

White = p<.01

The direction of the triangle indicates the predictor's relationship with the outcome.

Up indicates a positive sign for regression coefficient, whereas down indicates a negative coefficient sign.

Conclusions

Effectively supporting students as they pursue their higher education goals requires having information on which students are succeeding and which students are struggling at the institution. Having well-thought-out systems for collecting information about student progress is critical to this process. The first step in designing systems for collecting information about students is to develop agreed-upon operational definitions for characteristics such as preparation level, parental income, and immigration status. Shared formats for survey questions that collect demographic information make it easier to compare information gathered by institutional researchers and program staff. Comparing information may be difficult to accomplish in large, decentralized institutions where limited and consistent communication may occur between institutional research offices, faculty, and support program staff. The solution, of course, is more communication, which is difficult when it is not clear who should be initiating the communication and how it should occur.

One solution is for institutional researchers to post the outcomes of their results to interactive websites (open or closed) where members of the campus community can easily explore results by subgroups of interest. Here technology can play a critical supporting role in enhancing student success. Web-based self-service results are often necessarily global and descriptive, but even so many of the basic questions of the campus community can often be answered. More importantly, making data widely available engages users, which often leads to more meaningful and deep questions and conversations. These can then serve as a bridge for IR to create connections around campus. Support and academic units want to know more about what is behind the results they are seeing, or, in other words, what factors or policies are either hindering or enhancing the success of their students. In order to increase the chance that these discussions lead to real change, the results and analyses need to framed within the institution's assessment plan and closely aligned with the institution's strategic plan in order to ground the results in a meaningful institutional context.

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Student-Athlete Success: Information and Implications for Informed Decision Making

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College athletics is a billion dollar industry (Desrochers, 2013) that impacts many facets of higher education. Campus administrators need access to reliable sources of information when making decisions that influence student-athlete experiences. Over the past three decades, athletic reporting requirements mandated by federal and state governments and athletic governing associations have grown substantially. Before 1980, attempts at a comprehensive or longitudinal analysis of academics and athletics usually relied on ad hoc surveys conducted by external groups to carry out a specific investigation (Thelin & Wiseman, 1992). In 1992 Mallette and Howard first emphasized the importance of consistent and reliable information for decisions regarding intercollegiate athletics, and highlighted the demands for greater athletic accountability and reporting. As the availability and importance of data in intercollegiate athletics decision making continued to grow, scholars and practitioners drew attention to how data could be used by campus level leaders. In 2009, Lawrence, Mullin, and Horton discussed the importance of using data when making decisions concerning eliminating, expanding, and maintaining athletics teams and programs at the community college level. Hoffman, Antony, and Alfaro also addressed these and other critical questions and challenges related to how these data sources could aid decision making at four-year institutions (2009).

Today, the emphasis has shifted from data-driven decision making to informed decision making. Increased demands for accountability by various higher education stakeholders have resulted in more consistent, long-term reporting by individual institutions, governing organizations, and external groups. For instance, most individual institutions must collect and report federal-level data on intercollegiate athletics. Much of the federal data available today can be traced to the 1990 Student Right-to-Know Act (Bradley, 1992) or the 1996 modifications to Section 485 (g) of the Higher Education Act of 1965 that now make Equity in Athletics Disclosure Act (EADA) data widely available.

Data collection varies among athletic governing associations and institution types (see Table 1). The National Collegiate Athletic Association (NCAA) has emerged as the most extensive in terms of collection and reporting of primary and secondary data sources on several areas of intercollegiate athletics. Although most of the demands for such data focus on NCAA Division I member institutions and athletes, more attention has been given recently to other NCAA divisions and the other two- and four-year institutions that sponsor varsity athletics. For example, the Andrew W. Mellon Foundation's College and Beyond database produces data and reports on student welfare, academics, gender equity, and financial issues among NCAA member schools in Division II and III (Bowen & Levin, 2005; Shulman & Bowen, 2001; see also Emerson, Brooks, & McKenzie, 2009).

Table 1. Intercollegiate Athletics Governing Associations (listed alphabetically)

Governing Association	Acronym	Institution Type	Member Schools
Association of Christian College Athletics	ACCA	Four-year	24
California Community College Athletic Association	CCCAA	Two-year	107
National Association of Intercollegiate Athletics	NAIA	Four-year	256
National Christian College Athletic Association	NCCAA	Four-year	113
National Collegiate Athletic Association	NCAA	Four-year	1,066
National Junior College Athletic Association	NJCAA	Two-year	517
Northwest Athletic Association of Community Colleges	NWAACC	Two-year	34
United States Collegiate Athletic Association	USCAA	Four-year	91

Regardless of athletic affiliation or institutional characteristics, all higher education institutions with intercollegiate athletics programs are increasingly engaged in collecting academic, financial, gender equity, and student-athlete wellness data. This chapter provides information about data sources as well as useful frames of reference for understanding the issues related to student-athlete well-being, academic success, and institutions' persistence to degree attainment. Although NCAA-member institutions are the most well known and subject to more reporting than institutions in other governing bodies, the importance of collecting and reporting accurate and reliable data related to athletics among all institutions continues to grow. In this chapter we outline many initiatives that have been instituted to better understand participation, student experiences, and academic success (retention, graduation, and success) among student-athletes at two- and four-year institutions.

Chapter Overview

This chapter provides information on intercollegiate athletics data, sources of these data, and insights into how administrators can utilize these sources to understand student-athletes on their campus and peer institutions. This chapter is written with two- and four-year campus administrators in mind, such as those in student development or academic affairs who oversee programs or participate in campus committees. This chapter is also intended as a resource for faculty or administrators who are members of campus athletics boards or the faculty senates that make recommendations or set policies that impact student-athletes. This chapter provides a description of the institutional level data that can be used for benchmarking student-athlete outcomes on academic performance or other indicators such as athletic department climate and its impact on student-athlete success.

This chapter begins with a brief overview of athletic affiliations, followed by sections describing the collection and reporting of sports participation, academic outcomes, and student-athlete experiences. These sections each illustrate the data that are required and the importance of understanding these areas. We discuss the NCAA's academic success measures and the Division I Institutional Performance Program (IPP) and Division II and III self-study programs. Finally, the chapter concludes with a discussion of data collection and reporting that summarizes how the data on student-athlete issues can impact student-athlete success.

Athletic Affiliation and Governance

Intercollegiate athletic programs belong to one or more athletic governing associations and conferences that oversee and govern athletic competitions among members. Examples of governing associations include the NCAA, the National Association of Intercollegiate Athletics (NAIA), the National Christian College Athletic Association (NCCAA), and the National Junior College Athletic Association (NJCAA). The NCAA is the most recognized governing association and has the most organized data collection systems among any of the national governing bodies. Just under half (48%) of all two- and four-year higher education institutions with athletic programs are affiliated with the NCAA. Data collected by the NCAA focus mostly on student-athlete participation, fiscal issues, academic progress, gender equity, and student-athlete well-being. While most athletic governing associations do not maintain similar databases or require as much reporting as the NCAA, the need for consistent, reliable sources of information related to athletic budgets, gender equity and the student-athlete experiences are still present for all institutions.

In addition to membership in a governing organization, most institutions are also members of at least one athletic conference. Institutions in the same conference typically place a similar emphasis on athletics, and they often share similar institutional characteristics and academic missions (Sweitzer, 2009; Toma, 2003). Examples of the most notable Division I conferences include the Southeastern (SEC), Big 12, and Big Ten conferences. These

conferences represent some of the most recognized and profitable athletic conferences among Division I athletics (Smith, 2013). The Ivy League and many historically black colleges and universities (HBCUs) have organized themselves around academic mission and athletic competition. At the community college level, the National Junior College Athletic Association member institutions organize themselves at a national governing board and local conference level, while the California and Pacific Northwest schools organize based on regional affiliation (see Table 1).

Although presidents bear the greatest responsibility for the integrity of athletic programs, day-to-day oversight at many four-year institutions is the responsibility of a faculty committee (Mallette & Howard, 1992). Individual institutions often convene an advisory board to the president consisting of faculty, athletic department, and campus-level staff with responsibility for student welfare or academic affairs. These athletic advisory committees vary greatly in their composition, campus responsibility, and oversight of the athletic department activities. In recent years, 61 faculty senates from institutions within the NCAA Football Bowl Subdivision (FBS) formed the Coalition on Intercollegiate Athletics (COIA). Among the initiatives of COIA's mission are to provide a national faculty voice on issues of academic integrity and quality, student-athlete welfare, and campus governance of intercollegiate athletics. Despite the presence of local campus boards and national committees dedicated to issues of intercollegiate athletics, faculty knowledge about athletics plays a key role in their engagement with oversight and governance (Lawrence, Hendricks, & Ott, 2007).

The NCAA requires each member institution to appoint a faculty athletics representative (FAR) for their respective institution. The FAR serves on the campus athletic committee or board and is a liaison to the faculty senate for institutional oversight and student-athlete well-being. As the Faculty Athletics Representative Handbook (NCAA, 1998) indicates, faculty oversight of athletics is important since student-athletes are to be students first. According to a recent national survey (NCAA, 2012), many FARs feel empowered regarding their role to ensure academic integrity, rules compliance, and student-athlete well-being; however, such feelings generally vary by division. About 90% of Division I FARs responded as such, whereas FARs in Division III expressed the lowest levels of empowerment to assist in these areas.

More than 85% of FARs thought that their athletics program is integrated into the educational mission of their institution. Many of the FARs felt the current GPA and ACT/SAT minimum requirements for freshman eligibility are too low; however, the survey was taken prior to the announcement of the new higher standards that will take effect in 2016. Practically one in five FARs thought that all first-year student-athletes should be ineligible for competition. Finally, a majority of FARs thought that student-athletes at their institution cluster their choices of academic majors.

The concerns of FARs specifically and individual faculty generally indicate that the campus athletic board or faculty senate are important locations for monitoring and evaluating student-athlete success. The FARA, COIA, and KCIA resources offer perspectives on student-athlete welfare and academic integrity on campus-level faculty governance (see Appendix:

Resources). These resources provide background and perspective related to the broader issues and questions about the role of athletics at four-year institutions, especially those with large, revenue-generating athletic departments.

Student-Athlete Experiences and Academic Success

Student-athletes are a unique population of students and in recent years more attention has been paid to their academics as well as to their overall experience of participating in sports while attending college. Currently, there are approximately 89,000 community college athletes; 50,000 representing NAIA; and 444,000 student-athletes competing for NCAA-member institutions. The types of varsity sports sponsored and the number of participants at each institution can be found on the College Navigator website: http://nces.ed.gov/collegenavigator/.

Several sources of academic, experiences, and outcomes data are now available. This section provides an overview of (a) how to define student-athletes, (b) research and data that influence access, retention, and success, (c) some of the required reporting and key sources for data, and (d) specific measures collected and reported by NCAA-member institutions.

Who Is a Student-Athlete?

On the surface, the definition of who a student-athlete is seems like a rather simple concept. Generally speaking, a student-athlete is an individual who represents his or her college or university in varsity athletic competitions while enrolled in the institution he or she represents. More specific definitions designate student-athletes as those full-time students, receiving athletically related aid. However, the definition of a student-athlete can vary in terms of academic measures, gender equity, for financial aid, or legal purposes. Furthermore, how a student-athlete is defined can also "significantly alter the definitions" academic success or compliance with gender equity (Howard, 1992, p. 86). Definitions of who is a student-athlete or who can participate in varsity athletic competition are often similar, but can vary slightly across governing associations or reporting requirements. For example, the NCAA first defines student-athletes while in high school as prospective student-athletes through their Initial Eligibility Center. Defining student-athletes for the purposes of EADA reporting is based on one or more of three criteria by the first varsity competition: (a) being listed on the varsity roster, (b) receiving athletically related aid, or (c) practicing with the team and receiving coaching from one of the varsity coaches.

Campus-level administrators who know about the composition of the student-athlete population on their campus and how student-athletes are accounted for across various reporting contexts will be better prepared to advocate for student-athletes and to set policies that promote success consistent with their institutions' educational missions. For example, are there a high number of student-athletes receiving partial athletic aid? How many student-athletes participate on more than one team? It's a common practice to offer cross-country, indoor track, and outdoor

track. How are these students accounted for if they participate in all three teams, particularly in terms of gender equity reporting? Do some teams regularly "redshirt" athletes (hold an athlete out of competition to retain eligibility for an additional year)? The ways student-athletes are identified and counted for reporting purposes are constrained in part by reporting requirements for initial eligibility, academic outcomes, and gender equity as outlined in this section. Understanding the differences in how student-athletes are defined and counted can contribute to variations in the number of student-athletes that sometimes can occur in reporting and can aid administrators in evaluating how to support all student-athletes.

Admissions

Although governing associations often set minimum academic requirements, the issue of student-athletes and admissions is largely a campus-level decision. For most institutions the student-athletes admitted under the institution's standard admissions process receive little attention from the campus community paid to their status as athletes. However, when student-athletes who do not meet the institution's minimum requirements are admitted, or when there is a gap between the admissions profile of the student-athlete and the overall admitted class, there is much more scrutiny. These admissions decisions garner the most attention, require careful attention by campus administrators, and rarely go unnoticed by external stakeholders. There are two main student-athlete admissions decisions that should receive regular evaluation from campus administrators—those of student-athletes who do not meet the minimum academic threshold for admission and those who meet the minimum requirements (often at highly selective schools), but who without their athlete status would not receive an offer of admission.

For NCAA member institutions individual prospective student-athletes must meet academic standards that begin with initial eligibility requirements based on high school core courses, SAT scores, and grade point average through the NCAA Initial Eligibility Center. These standards are established for Division I and Division II prospective student-athletes. However, the NCAA does not set specific minimum academic standards for student-athletes who compete at Division III member institutions, but leaves minimum standards to the discretion of those institutions.

The weight that athletic status holds in the admissions applications raises several questions that should be considered throughout the admissions process. In particular, questions such as: How likely is it that the institution can support students with academic credentials below the minimum standard? How closely does athletic achievement indicate persistence and success of student-athletes at that institution? When students do not meet minimum academic standards but are admitted anyway they are often referred to as "special admits." Institutions should take care that special admits are vetted through a process that involves admissions personnel, campus administrators, and faculty representatives. This process should ideally include an evaluation of the infrastructure needed to support each student-athlete with special admission status, and also hold some certainty that the institution, not just the athletic department, can support these

student-athletes through their academic careers despite a lack of preparation they may have relative to their peers and athletic commitments that will further impinge on their time and energy. Previous performance of special admits and current student-athlete academic and success measures can provide useful context with which to make individual future special admit decisions.

Institutions should carefully consider the strengths and qualities that student-athletes who meet most but not all of the admissions criteria might bring to their campus. Highly selective schools often suggest that student-athletes will bring racial diversity, excellence, and leadership as to the campus as justification for admitting students based on athletic status are (Fried, 2007). Yet, the demands of athletic competition at highly selective schools often lead to academic underperformance (Emerson, Brooks, & McKenzie, 2009) for athletes compared to their nonathlete peers. Assessing the benefits of participating in athletics is difficult, "because there are no ready measures, or even agreed-on definitions" of most of the justifications for admission based on athletic status (Fried, 2007, p. 13). Therefore administrators should weigh the pros and cons of accepting students with special admission status carefully.

Athletic Scholarships

For many students, financial aid is a key component in access to and persistence in higher education. However, not all financial aid programs have the same impact on persistence and degree attainment. There are two main types of athletic-related aid: athletic scholarships and tuition waivers. The awarding of athletic scholarships is direct aid to students from the athletic department and is regulated by the athletic governing association, such as the NCAA or the NAIA. These scholarships can impact admissions beyond those of the student-athletes to whom they are granted; at community colleges, the award of direct aid in the form of scholarships is thought to "affect a college's success in recruiting all students and athletes particularly" (Castañeda, Katsinas, & Hardy, 2008, p. 102).

Within the NJCAA, Division I member institutions are permitted to provide student-athletes with tuition, fees, room and board, and books. Division II member institutions are permitted to provide student-athletes with tuition, fees, and books only. No financial aid for athletic participation is allowed at the Division III level.

Tuition waivers are regulated by individual states and can function as direct aid to students or to the athletic department on behalf of student-athletes for specific programs. However, not all states permit the use of tuition waivers, so in their efforts to expand opportunities for athletic participation and access to higher education, a number of states and institutions have used direct student aid in the form of athletic scholarships, while others adopt tuition waivers as a means to recruit prospective students (Lawrence, Mullin, Horton, 2009) and fund athletic participation (Hoffman, Hoffman, & Kotila, 2008).

Mendez, Mendoza, and Archer (2009) examined financial aid, athletic scholarships, and student-athlete retention in Oklahoma. Their study found that the retention of low-income

minority athletes increases when athletic aid is in the form of grants rather than student-loans (2009). The state of Washington has approved the use of tuition waivers to achieve gender equity in athletics participation among its four-year institutions. This program is an athletic department subsidy in which individual student-athletes do not receive any aid directly. Tuition waivers of this sort benefit revenue-generating athletic programs with larger overall budgets and general student enrollment, but do not go far enough to provide equity for institutions with modest football programs and lower overall enrollments (Hoffman, Hoffman, & Kotila, 2008).

Among community colleges, Byrd and Williams (2007) suggest the "establishment of statewide guidelines" to create uniform funding policies that will encourage participation in athletics as a mechanism to enroll in community college (p. 48). An example at the community college level in Washington combines partial scholarships with partial tuition waivers to both men and women, creating a direct student aid program for individual student-athletes in order to increase overall participation in athletics among two-year institutions (Hoffman & Horton, 2011).

Student-Athlete Experiences

The experiences of student-athletes across all institution types are an emerging area of interest by policy makers, governing associations, and academic researchers. On one hand, inclusion of student-athlete status as a demographic variable in studies of student experience allows for the comparison between athletes and nonathletes that can provide useful information about the impact and outcomes of participating in athletics. But there is also a need for studying the issues specific to student-athletes and their experiences. The Student-Athlete Climate Study (SACS) surveyed 8,500 students across 164 NCAA member institutions, exploring student-athlete experiences by measuring seven scales: perceptions of respect, perceptions of climate, personal comfort with teammate diversity, interactions with faculty, interactions with athletic personnel, perceptions of diversity leadership with athletic personnel, and perceptions of one's athletic department addressing discrimination. Findings from the survey and how to apply for access to the SACS survey are found at: http://www.ed.psu.edu/educ/student-athlete.

The Inter-university Consortium for Political and Social Research (ICPSR) sponsors publicly available data in the Student-Athlete Experiences Data Archive. This archive includes measures of academic success and graduation rates from NCAA member institutions as well as the experiences of current and former student-athletes from the Growth, Opportunities, Aspirations and Learning of Students in college study (GOALS) and the Study of College Outcomes and Recent Experiences (SCORE) surveys. Beginning in 2013, ICPSR and the NCAA will pilot a Request for Proposals program to access the NCAA GOALS Dataset for empirical research by scholars, policy makers, and FARs. More information about the Student-Athlete Experiences Data Archive and the NCAA GOALS Dataset can be found on the ICPSR website: http://www.icpsr.umich.edu/icpsrweb/NCAA/.

The on- and off-the-field experiences of student-athletes influence their overall retention, persistence and success. Issues of student athlete experiences such as overall well-being, athletic department climate, and treatment by peers and faculty on campus are areas where campus administrators have a role to play in providing advocacy and support for student-athletes. The SACS survey and access to NCAA data provided by ICPSR offer context for the issues student-athletes face across a wide range of institution types.

Collecting information about student-athletes' treatment by coaches, about homophobia in sport, about substance use and abuse, about social media habits, about gambling, and about athlete identity are each gaining more attention. Learning how these and other student-athletes' experiences vary by sport and demographic subgroups through surveys or exit interviews at the campus level can offer important insight to institutional administrators on athletics or other committees charged with overseeing the welfare of student-athletes. National reports and campus-level data collection offer administrators and faculty the information they need to create safe spaces in the athletic department on campus for student-athletes to learn to access services and support. It's up to individual institutions to develop processes and policies that evaluate student-athlete experiences and ensure that these receive the same level of attention and interest as academic measures.

Equity in Athletics and Data Collection and Reporting

Title IX of the Education Amendments of 1972 is a federal law that prohibits discrimination on the basis of sex in any federally-funded education program or activity, including intercollegiate athletics. There are three areas institutions must meet Title IX requirements for equity in athletic opportunity: (a) participation, (b) program operations, and (c) scholarships. All institutions are required to report Equity in Athletics Disclosure Act (EADA) data in these program areas each year.

The purpose of the EADA data is to provide a method to assess an institution's commitment to providing equitable athletic opportunities for women and men. Any co-educational institution of higher education that participates in a federal student aid program and sponsors an athletics program must prepare an EADA report to the Department of Education. Data for all two-year and four-year EADA statistics are online at http://ope.ed.gov/athletics/.

Complying with gender equity in athletics participation is often a balancing act of federal guidelines and governing association squad size regulations. Although equity in participation is a key component in meeting the spirit and letter of the law, women routinely make up more of the student-body than men but less of the athlete population and female student-athletes rarely receive an equitable share of athletically-related financial aid. Participation measures often fluctuate from year to year because of shifting enrollments and are often complicated by in-state vs. out-of-state tuition rates and the larger number of scholarships permitted in football than in any women's sport. However, large athletic departments that sponsor Division I FBS athletic programs often comply with Title IX's participation and program opportunities more

consistently than other NCAA, NAIA, or community college athletic programs because of their capacity to generate revenue. For low-resource institutions, unless student-athletes or their coaches raise concerns or file formal complaints about inequality in participation, program resources, or scholarships, disparity in athletic opportunity and treatment is frequently not remedied.

However, because institutions must regularly report EADA data, campus administrators can easily access gender equity data and question why Title IX requirements are not met. For example, at many community colleges the reasons given as to why the participation requirements of Title IX are not being met are often a lack of interest or that women have other responsibilities such as work or childcare, but the acceptance of these reasons may be the result of a less than "genuine effort" on the part of the institutions to comply (Thomas, 2011). Campus administrators should not accept these excuses when inequities exist in their athletic department. Furthermore, cutting men's teams in order to comply with Title IX should be discouraged and alternative ways should be identified in which budget issues in athletics can be addressed. Compliance with gender equity goes beyond the collection of EADA data. Campus leaders must work to comply with the law in ways that promote access and success for all student-athletes.

In 1990, the Student Right-to-Know Act was passed, requiring all two- and four-year institutions to report student-athlete graduation rates. The federal formula for student-athlete graduation rates is based on a cohort of first-time freshmen in the fall term receiving athletically related financial aid and followed up to six years after enrollment. Student-athletes not in the cohort at the end of six years are not included in the overall student-athlete graduation rate for that cohort year at that institution. Student-athletes who transfer, do not receive aid, or do not complete their degree in the six-year time period are not included. The federal graduation rate for student-athletes should be evaluated with other academic success measures such as time to degree and grade point average and compared to institutional trends. Care should be taken to disaggregate student-athletes by sport and ethnicity status and make like comparisons to nonathlete peers. Currently there is not one central location that collects graduation measures across all student athletes. Instead, these measures are reported by governing associations, conference, or individual institutions.

The academic success of student-athletes is an increasingly important issue, regardless of the size and scope of an institution's athletic program. Institutions increasingly rely on data for making athletic policy and program decisions (Petr & Paskus, 2009); likewise, reporting requirements regarding athletics and student-athletes have increased. This section describes the data that NCAA member institutions collect and report regarding the academic success of their student-athletes. This section serves as a primer on reporting for faculty and administrators at NCAA member schools on the differences between the federal graduation rate and an overview of the NCAA's graduation measures, academic progress indicators, and new athletic program self-study evaluation.

Using numbers reported by the Integrated Postsecondary Education Data System (IPEDS), the NCAA requires institutions to submit graduation and retention statistics for their

entire student bodies each academic year as well as the most recent six-year federal graduation rate for their student bodies and for their student-athletes who receive athletically-related financial aid. Most NCAA Division III institutions are not required to submit their student-athletes' federal graduation rates to the NCAA since they do not provide athletic scholarships. None of the other athletic governing bodies (non-NCAA) require their member schools to submit student-athlete graduation rates.

Institutions reporting their federal graduation rates to the NCAA do so by gender and by race/ethnicity. Schools must also report by: football, men's basketball, baseball, men's track/cross country, men's other sports and mixed sports, women's basketball, women's track/cross country, and women's other sports. Schools also report the rate for all sports as a whole. Thus, college administrators of NCAA member institutions can look to NCAA data to see how well their student-athletes persist to graduation, and to make comparisons to their peer institutions.

The NCAA's Graduation Success Rate (GSR) and Academic Success Rate (ASR) are alternatives to the federal graduation rate methodology. The GSR is for NCAA Division I sports, while the ASR is for Division II. The GSR/ASR student population consists of:

- first-time, full-time baccalaureate degree-seeking freshmen receiving athletic aid entering in the fall term (same as the federal graduation rate methodology);
- first-time, full-time baccalaureate degree-seeking freshmen receiving athletic aid entering mid-year (different from federal methodology); and
- student-athletes receiving athletic aid who transfer into the institution and are placed in the cohort based upon initial full-time enrollment at a college or university (different from federal methodology).

The other key difference between the GSR/ASR and the federal methodology is that the GSR/ASR subtracts student-athletes who leave an institution prior to graduation, providing that the student left in good academic standing.

The difference between the Division I GSR and the Division II ASR is that the ASR includes freshmen who were recruited to the institution but did not receive athletics aid, as well as non-recruited students who were on the team's roster on or after the first date of competition. The GSR does, however, include such students in the calculations for specific sports for those Division I institutions that do not offer athletic aid in that particular sport.

The U.S. Department of Education established the following hierarchy to determine in which sport to count a student-athlete who is receiving athletic aid and who competes in more than one sport: football, basketball, baseball, track/cross country, other sports. The NCAA uses this same hierarchy, which is ordered as such because the student-athletes in these four sports tend to have the lowest graduation rates.

Reporting categories for the GSR/ASR calculation include:

- number enrolled as full-time baccalaureate-seeking students;
- number graduated;

- number of allowable exclusions, which are the same as in federal reporting (students who died or left school to join the military, a church mission, or foreign organization; pregnancy is not an exclusion); and
- number of students who left school who would have been academically eligible to compete the following season.

The GSR/ASR calculation adds the number of allowable exclusions to the number who left school who were eligible to compete. That number is then subtracted from the number enrolled to get the new cohort number. The number of graduates is then divided by the new cohort.

The GSR/ASR data are broken down by race/ethnicity on five groups of student-athletes: federal cohort, two-year transfers, four-year transfers, mid-year enrollees, and non-scholarship student-athletes. The NCAA provides a set of public reports for each school which are available on the NCAA Web site.

The NCAA's Academic Performance Program and Academic Tracking System tracks the academic progress of Division I and II student-athletes longitudinally, via term-by-term credits attempted and earned, GPA, and eligibility and retention status. The Division I APP is used to calculate the Academic Progress Rate (APR). Data are collected for each individual student-athlete, and then aggregated by team to calculate a team APR.

The Division I Academic Progress Rate (APR) calculation includes two measures for each student-athlete for each academic term: academic eligibility (via NCAA, conference, and institutional eligibility standards) and retention status, resulting in each student-athlete earning either zero, one, or two points. To calculate a team's APR, all of these points a team has earned are summed, and that number is divided by the total possible points. The resulting proportion is multiplied by 1000 to get the APR score. A team's APR score is the result of combining the term-by-term calculations over the most recent four years.

The APR minimum for a (Division I) team to avoid sanctions has changed since its inception. In order to compete in the 2013-14 postseason, teams must achieve a 900 multi-year APR or a 930 average over the most recent two years. For the 2014-15 season this standard will increase to a rolling four-year average of 930 (which predicts to a Graduation Success Rate of approximately 50%), or a 940 two-year average APR. In 2015-16, the 930 benchmark for postseason competition participation, and additional penalties, will be implemented fully (NCAA, 2011e).

Institutions that underperform are subject to penalties. The Division II ATS is a tracking system only and does not award points, nor result in penalties for underperforming institutions. The penalties in Division I for not meeting APR requirements directly impact student-athletes. The first level of the newly-adopted penalty structure limits teams to 16 hours of practice a week over five days, with the lost four hours to be replaced with academic activities. This represents a reduction of four hours and one day per week of practice time. The second level adds competition reduction, either in the traditional or non-traditional season, to the first-level penalties. The third level provides for a menu of penalty options, including coaching suspensions, financial aid reductions, and restricted NCAA membership.

Student-athlete academic eligibility and graduation rates are important for all institutions at all levels of athletic competition to monitor, regardless of which athletic governing body an institution is a member. For NCAA member institutions in all divisions the NCAA has Compliance Assistant, which is a software tool to aid administrators in determining if their athletic department and student-athletes are in compliance with NCAA rules and regulations. The tool assists in monitoring compliance in areas such as financial aid, eligibility, and recruiting, and also serves as a data collection system in which users have the ability to generate NCAA forms. The Compliance Assistant program, documentation, and technical support are available free to NCAA-member institutions (NCAA, 2011d). The NAIA has similar software, known as Eligibility Certification Processing Software (ECP), for its member institutions. These athletic compliance packages are utilized mostly by athletic administrators at most NCAA- and NAIA-member institutions.

The NCAA replaced the Division I Athletics Certification Process with the (Division-I) Institutional Performance Program (IPP) which is designed to improve the student-athlete experience and to help institutions meet NCAA integrity guidelines. The IPP focuses on four areas (see Table 2), three of which directly relate to student-athletes.

Table 2. Institutional Performance Program Focus Areas

Academics
• *Analysis and review of data already being collected (Academic Progress Rate, Graduation Success Rate)*
• *Academic support available*
• *Eligibility certification*
• *Entering academic profiles*
Student-athlete experience
• *Student-athlete survey administered by NCAA national office*
• *Metrics and current resources available*
• *Centerpiece of new program*
Fiscal management
• *Financial information currently provided as part of NCAA financial dashboards*
• *Analyze metrics and current resources available*
Inclusion (gender and ethnicity)
• *Equity in Athletics Disclosure Act data*
• *Campus diversity information*
• *Analyze metrics and current resources available*
Source: NCAA (n.d.)

According to the NCAA, “Division II and III institutions are required to conduct a comprehensive self-study and evaluation of their intercollegiate athletics programs at least once

every five years using the Institutional Self-Study Guide" (2010). The purpose of the Division II self-study program is to address topics in the following areas: institutional purpose and athletics philosophy; the authority of the chief executive officer in personnel and financial affairs; athletics organization and administration; finances; personnel; sports programs; recruiting; admissions; eligibility policies; and services for and a profile of student-athletes (NCAA, 2008).

The Division III self-study is conducted by conferences rather than by individual member institutions. Each conference assesses the overall operation of each institution in accordance with Division III philosophy in seven broad areas: conference philosophy, institutional personnel involvement, conference organization and operation, conference accountability and control, NCAA involvement, sportsmanship, and student-athlete inclusion (NCAA, 2009).

Intercollegiate athletics programs, regardless of their size and scope, will continue to be a part of the increasing call for assessment and accountability in higher education. The push for data about student-athletes has intensified, and faculty and administrators will continue to play an important role in evaluating measures of student-athlete performance. Campus administrators are well-positioned to understand what contributes to success, making use of available data on student-athletes to inform their decision-making.

Despite the recent growth in data sources, there are many challenges to collecting and reporting intercollegiate athletics data on the experiences of student-athletes and the outcomes of athletic participation. Although academic data on student-athlete outcomes in the classroom at NCAA member institutions far exceeds what the federal government requires and often has more specific measures, this can lead to confusion about what is actually being measured. APR and GSR are limited to NCAA-member schools at the Division I and Division II level, leaving limited information about the academic outcomes for students in the NCAA's largest division—Division III. This coupled with a lack of easily accessible information about NAIA member institutions make understanding the small college sector a continued challenge. In addition, large-scale data sources for two-year schools remain largely inadequate. The limited data on academic measures and experiences of community college student-athletes mean that small-college campus administrators will need to seek out information from their athletic departments and institutional research offices to make comparisons to information provided by governing bodies and the federal government.

Conclusion

This chapter has provided an overview of how student-athletes are defined and the implications of who is counted as a student-athlete. It has also presented a summary of the primary areas of student athlete outcomes, how to use data for admissions decisions, how athletic aid is awarded, academic success, and student-athlete experiences. This chapter calls upon campus administrators and higher education faculty to review information about student-athletes in these areas and to ask questions about student-athletes on their campus.

Where the federal government or athletic governing associations require reporting, institutional leaders can ask questions and become well-versed in the issues and information available to them about their student-athletes. These measures or benchmarks offer a standard that can be evaluated on an annual or more frequent basis to compare performance and identify processes that lead to outcomes in a systematic way (Lyddon, McComb, & Mizak, 2012). Institutional leaders can then make comparisons to nonathletes or peer institutions when achieving student-athlete success goals falls short or processes inadequately support student-athletes. Administrators who understand what contributes to academic success and positive student-athlete experiences will be able to advocate policies and programs that promote these outcomes.

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Appendix

Resources

Coalition on Intercollegiate Athletics
http://blogs.comm.psu.edu/thecoia/

Equity in Athletics Disclosure Act Data Cutting Tool
http://ope.ed.gov/athletics

Faculty Athletics Representatives Association
http://farawebsite.org/

Knight Commission on Intercollegiate Athletics
www.knightcommission.org

NCAA Research
http://www.ncaa.org/wps/wcm/connect/public/NCAA/Resources/Research/Research+Home

Student-Athlete Climate Study (SACS)
http://www.ed.psu.edu/educ/student-athlete

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Supporting Student Success of Working Students

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Any institution seeking to promote student success must confront the reality that significant proportions of its student body are likely to be employed either full time or part time. Levels of student employment have consequences for the amount and type of institutional engagement by the individual student as well as how the institution works to support the working student. It is imperative for institutional leaders to understand the factors driving student employment at their institution and to shape their support strategies accordingly.

The wide-scale presence of working students in institutions of American higher education is a phenomenon of the latter half of the 20th century. It is the product of two broad movements in American higher education. The first is the impact of various state and federal policies developed to make higher education available and affordable for all students. The second is a historical market trend of an increasing demand for employment of those with baccalaureate and higher degrees, driven by advancements in technology and its use in our society. These two trends have made it both possible and desirable for working students to pursue higher education.

The proportion of full-time students, ages 16-24, who are employed increased from 34% in 1970 to 52% in 2000. Since 2000, this rate of employment decreased steadily to 40% in 2010 (Aud et al., 2012). Among employed full-time college students, the number of hours worked followed the same pattern. The percent of employed full-time college students working between 20 and 34 hours increased from 10% in 1970 to 22% in 2000 and receded to 17% in 2010. These patterns of growth are generally observed across public and private institutions. Part-time college students have historically had a much higher rate of employment. This rate fluctuated between 81% and 86% between 1970 and 2000 but dropped to 73% in 2010 (Aud et al., 2012).

There are several important dimensions to consider about working students. The first is work intensity—measured primarily through number of hours worked each week. Past research suggests a relationship between number of hours worked and academic success. Part-time work during college is associated with higher rates of persistence and academic engagement. Full-time work during college is associated with lower rates of persistence and engagement.

Using self-reported data in the National Postsecondary Student Aid Study (2000), the National Center for Educational Statistics ([NCES], 2003) reported that a number of dimensions are associated in predictable ways to differentiate "students who work" or "employees who study." The main difference is that students who work are students first and employees second, while employees who study are employees first and students second. In addition, the majority of students who work are younger, financially dependent on parents, and single with no dependents. Employees who study, by contrast, are more likely to be financially independent, have dependents, and be married.

A second important point to consider is the relationship of work to the educational institution and program of study. This dimension includes whether the work is part of a credit-bearing experience (e.g., internship, field placement) or not. This difference is sometimes discussed as sponsored versus non-sponsored work experiences. In a very limited number of cases, however, credit may be awarded by an institution after a work experience through documentation of academic content learned on the job (e.g., DANTES, prior learning assessment).

The relationship between work and program of study should be considered more broadly for its impact on student learning, persistence, and post-graduation success. As Pascarella and Terenzini (2005) have shown, work experiences with relevance to the program of study, especially for students who work, can have a positive and independent impact on learning in the field by providing opportunities to practice classroom content. Such limited work experiences can actually support student persistence. Location of work (on-campus versus off-campus) can also matter because of its impact on academic and social integration of the student. Both sponsored and non-sponsored work experiences may also increase the likelihood that the student is employed in his or her field after graduation by providing opportunities to develop professional networks and practice employment-related skills.

Four-year institutions have lower numbers of working adult students than two-year institutions. Kasworm (2010) suggests that this is due to four-year campus environments having less accessible instructional and support services for working adult students. Community colleges are more accessible for working students as they tend to be more conveniently located and to offer developmental courses to support academically under-prepared students, and practical programs that tie directly to the workforce. Some also offer accelerated programs that increase access by shortening the time to completion and the student's financial investment. Multiple and flexible class schedules (e.g., night courses, one-time-a-week three-hour courses, and weekend classes) also tend to be available and contribute to the increased participation of working students in higher education.

The final significant dimension is the financial impact of work. Without doubt, most students work to cover the costs of higher education, which may also include supporting themselves and dependents while attending school. As Baum (2010) points out, since the needs analysis used for determining financial aid is based partially on previous year's earnings, beyond a certain level or prior year earnings (higher for independent than dependent students), financial

aid eligibility actually decreases. Federal work study programs, used only by approximately 4% of students in 2008, are functionally no different from other work experiences in that they also decrease other forms of financial aid available to students (Baum, 2010). On the other hand, it is also important to note many occasions where the work experience will function as a type of financial aid through tuition reimbursement programs.

Characteristics of Working Students

Approximately 73% of part-time and 40% of full-time college students are employed (Aud et al., 2012). However, there is a notable difference between undergraduate and graduate students within those proportions. While full-time undergraduate and graduate students are employed at rates of 40% and 38% respectively, part-time undergraduate and graduate students are employed at rates of 72% and 90% respectively (Aud et al., 2012). Students work to be able to support themselves financially while attending college, as well as to pay tuition and fees, living expenses, earn spending money, and gain work experiences. An additional motivator is parental expectation that students work while enrolled in college (King, 2006). There is no traditional pattern of when adults attend college, but often it is driven by external forces such as job loss, the needs of their families, a desire to change their quality of life, a need to enhance their job skills, or a change in the economy requires them to retrain (Kasworm, 2010).

The results of a National Center for Education Statistics (2003) study on working adults provided insights to the effects on persistence and degree attainment of working full or part time while attending college. While adult students enroll in postsecondary education for many reasons, the main one is to gain new skills for job advancement. Other important reasons include to attain certificates or degrees, for personal enrichment, or to obtain additional education required by their jobs (NCES, 2003). According to the NCES study, the profile of adult students who attended college were 24 years of age or older, worked full-time (87%), and attended school part-time (76%). Dividing students between employees who study and students who work the NCES descriptive study yielded significant differences between the two groups (see Table 1). Employees who study tended to be married (52%), had children and other dependents (57%), and were, on average, 36 years of age (NCES, 2003). Students who worked were less likely to be married (31%), have children and other dependents (43%), and on average were 30 years of age. Employees that studied identified their primary responsibility as their job. Sixty-eight percent of working adults who participated in the NCES study (2003) worked and attended school full time.

Students who work full time and see themselves as employees first are more likely to attend a community college than those who identify themselves as students first (61% versus 39%). Those students who see themselves as students first are more likely to be found at public four-year colleges and universities (NCES, 2003). “Among full-time students, employees who study were more likely than students who worked to be enrolled in private for-profit institutions” (NCES, 2003, p. vii).

King's (2006) research supported the results of the NCES 2003 study, reporting that 70-80% of students worked while in college, with 23% of them working 35 or more hours per week. The percentages in the two studies did not vary among race, age, gender, dependency or marital status. Working students who attended community colleges and for-profit institutions were "more likely to work full time than students at public or private non-for-profit four-year colleges or universities" (King, 2006, p. 2).

Table 1. Characteristics of Students Who Work and Employees Who Study

	Students Who Work	Employees Who Study
Average Age	30	36
% Married	31	52
% Children or Dependents	43	57
% Attending Community College	39	61
% Work Full Time	40	87
% Attend Full Time	68	24

Source: National Center for Education Statistics. (2003). *Work first, study second: Adult undergraduates who combine employment and postsecondary enrollment.* Washington, DC: U.S. Department of Education.

Financial Aid: Its Role and Impact

The enrollment rates of adult students in college are affected by their ability to receive federal financial aid (Lumina Foundation, 2009). Independent students may work full time and may not be dependent on or qualify for financial aid. Attending school part time decreases the cost of tuition and fees (though it slows academic progress considerably) while working full time increases students' financial resources. Forms of financial aid include grants, loans, and tuition assistance from employers. Employees who work full time and are enrolled in a bachelor's degree program are more likely to receive employer aid.

Dependent students may work to help pay for tuition and fees, for living expenses, or for extra spending money. Family income could play a role in the need to work while in college for dependent students, but the research has not shown a direct tie between family income and working (King, 2006).

A 2009 Lumina Foundation Report, "What We Know About Adult Learners," reported that the role of the federal government in providing access to higher education was "through financial aid paid directly to students and by directing policy and funding that will ultimately benefit institutions of higher education toward state governments" (p. 6). These types of policies favor students from higher socioeconomic statuses. Students from lower socioeconomic statuses are negatively affected by these policies due to how "financial aid emphasizes tax credits and loans over monetary grants or refunds" (p. 6). Financial aid policies do not take into

consideration the entire cost of being a college student (e.g., child care and transportation expenditures), support part-time enrollments, or take into consideration inflation, which has outpaced the value of "financial aid over time which leads to increased contributions by students" (p. 6).

The over-award rule within federal student aid affects many college students. This rule requires institutions to review grant aid, education loans, and federal work study earnings to ensure they do not add up to more than the gap between Expected Family Contribution (EFC) and cost of attendance. Work study earnings are considered aid.

Federal work study programs were developed to create employment opportunities for low-income students (Baum, 2010). They are part of an institution's campus-based federal aid system and include the Federal Supplemental Educational Opportunity Grants (FSEOG) and Perkins loans. These programs require institutions to provide matching funds and are regulated by federal rules and regulations. Institutions must provide at least 25% of the wages paid to students in on-campus and community services jobs, and at least 50% of the wages paid to students in jobs in the for-profit sector, which must be related to their academic pursuits (Baum, 2010).

The Job Location and Development (JLD) program is part of federal work study that incorporates community service jobs. Institutions can use part of their federal funds received under federal work study to develop the program. As part of its mission, the program finds off-campus job opportunities for current students who want jobs regardless of financial need. It is not necessary for students to be eligible for federal work study to participate. JLD jobs can be full or part time within the public or private sectors.

The impact of federal work study programs is minimal on how students pay for higher education due to how it is "currently structured and funded" (Baum, 2010, p. 9). In reality, these programs provide minimal opportunities for students. There has been little increase in funding over time and the programs are not able to serve the increasing number of students that are attending postsecondary education who are economically disadvantaged (Baum, 2010).

Attrition Risks for Working Students

The research portrays two types of college students, those who are employed that go to school and those who are students that work (e.g., NCES, 2003). Many college students are employed in some capacity, mainly to help cover the costs of their college education. It is predicted that this trend will continue, as the costs of higher education continue to escalate and traditional sources of state and federal funding decrease (State Higher Education Officers, 2013). Student success professionals need to be cognizant that traditional college students, who attend school full time while not working, may be a thing of the past. As students increase the number of hours they work, while attending college part and full time, accountability measures need to be evaluated in the context of those variables that institutions can control and manage to measure their effectiveness.

Attending college part time and working full time has resulted in lower rates of persistence and degree attainment (NCES, 2003). A NCES study (2003) found that those students who were employed and studied were less likely to complete a degree or certificate, or be enrolled after six years than those students who identified themselves as students who worked.

Students who work full time and who have identified their primary activity as work are at increased risk of leaving college in their first year. Their first-year persistence rates, when compared with those students who study, are significantly different (32% versus 7%). However, if colleges can retain employees who work through their first year of attendance, there are no significant differences between the groups in subsequent years (NCES, 2003).

Working students face many challenges as college students. They tend to be older, have dependents, work full time, attend college both full and part time, and must manage their time in order to attend classes and complete their studies. Having work and family responsibilities leaves little time to socially engage in the college environment. Numerous studies support the theories of student engagement leading to better learning and persistence (e.g., Astin, 1985; Pascarella & Terenzini, 2005; Tinto, 1993). Obviously, working students have limited time to engage in campus activities, which could lead to feelings of social disengagement, which could lead to dropping or stopping out of school.

Economically, college students are faced with increasing tuition and fees, as well as escalating costs of living expenses. Employees who go to school face less financial challenges than students who work. Some employers offer tuition assistance and often working students do work to finance all or a portion of their education. This may have both positive and negative consequences as discussed elsewhere in this chapter. Working above 20 hours per week has a clear correlation with student attrition. Students have simply less time and energy to devote to their studies. On the other hand, when work experience is closely tied to education, it can reinforce student learning. Employer awareness and support for an employee's education may even exercise an independent, positive influence on student success because of increased scheduling flexibility and employers monitoring school progress.

Adult college students who have to work while attending school are often not successful in attaining their degrees (Rowan-Kenyon, Swan, Deutsch, & Gansneder, 2010). Pusser et al. (2007) noted that adult college students who are employed more than 20 hours or more a week "are at high risk of failure" (2007, p. 5). One of the challenges for working students revolves around the amount of time available for college attendance and studies. To attend class on campus working students must budget commuting time as well as classroom attendance time and out-of-class study time. Other challenges include limited time to engage in outside discussions with faculty and classmates on course content or to attend campus events that can enhance the student learning experience. In addition, lack of time leads to students not meeting with tutors or interacting with student support services that are generally available on college campuses during normal working hours. Classroom performance often suffers as students are faced with competing demands from work and family.

Institutional Strategies for Supporting Working Students

Postsecondary institutions partner with governmental and non-governmental agencies for financial resources and to increase access for students. Federal agencies establish specific policies that regulate access to funds and provide opportunities for populations that meet their demographics. Many times, the funds provided by federal agencies play a role in encouraging other stakeholders (e.g., state governors, legislators, private sector organizations) to expand funding and develop new educational programs. Two federal acts expanded higher education access, the Morrill Acts and the GI Bill, both which helped individuals who could benefit from job skill enhancement and retraining. Other federal government programs that support postsecondary education students include the Workforce Investment Act (WIA), American Recovery and Reinvestment Act (ARRA), and the Higher Education Act (Hope Scholarship Tax Credit, Lifelong Learning Tax Credit, Pell Grants, and Stafford Loans).

The Workforce Investment Act (WIA) of 1998 replaced the Job Training Partnership Act. The purpose of WIA is to provide workforce development training within states and local communities, and it serves a variety of individuals, including those who have been laid off, veterans, individuals with disabilities, and employers. The overarching goal of WIA is to provide training to individuals in need in order to benefit society as a whole. A more trained and qualified workforce leads to a nation that is more productive and competitive, and results in a reduction in the number of individuals who are dependent on the welfare system. WIA provides "adult workers the education, retraining and reemployment services needed to increase their employment opportunities and long-term self-sufficiency" ("Workforce Investment Act Fact Sheets," n.d., para. 1).

Under the American Recovery and Reinvestment Act (ARRA), the American Opportunity Credit is available to help pay for college expenses (up to $2,500 annually). This credit has been extended through December 2017 by the American Taxpayer Relief Act of 2012. This credit modifies the existing Hope Credit, expanding the range of taxpayers who qualify to receive it. Many of those in higher income brackets and those who owe no taxes may qualify. Additional expenses are now covered, including required course materials, and the credit has been expanded from two to four years of postsecondary education ("American Opportunity Tax Credit," 2013).

The reauthorized Higher Education Act (HEA) supports postsecondary education by providing student financial aid and services to help students complete high school and transition to college, and by funding services within postsecondary institutions. Familiarity with governmental support of higher education is important for those advising students and for analysts studying the impact of various financial aid packages. As access and costs continue to be priorities of all constituents, mechanisms of funding and support systems for institutions need to be monitored and evaluated as to their operational effectiveness and use in supporting and increasing access to postsecondary education for all students.

Support within Curriculum, Instruction, and Educational Paths

There are four main areas for targeting support to the working student experience in the classroom. The first area is around the delivery format of instruction to address the needs of working students for programs that fit within their busy schedules and can be balanced with the requirements of job, family, and community responsibilities. For many institutions, this is accomplished by offering distance programs in either hybrid or completely online formats.

According to NCES (2011), in the 2007-08 academic year 20% of all undergraduates—approximately 4.3 million students—enrolled in at least one online course. Undergraduates who completed their entire program through distance education in the same period made up about 4% of all undergraduates. A 2006-07 NCES distance education study reported that 66% of two- and four-year colleges offered variations of distance education courses (2008). Other statistics indicate that 65% of these colleges offered courses for college-level credit, and 23% offered non-credit course options. In "2006-07 academic year, two-year and four-year institutions reported an estimated 12.2 million enrollments (or registrations) in college-level credit-granting distance education courses" (NCES, 2008, p. 3). Thirty-two percent of the institutions that participated in the NCES study reported that they offered both degree and certificate programs that could be completed totally through distance education. Of the estimated 11,200 college-level programs that were designed to be completed totally through distance education, 66% were degree programs and 34% were certificate programs (NCES, 2008).

Research comparing the effectiveness of distance education in its current form of online delivery is still relatively new. The general finding of this research has been one of no statistically significant differences in student learning or success between distance education and traditional formats although it is highly dependent on the particular characteristics of the curriculum and instructor (Cavanaugh, 2001; Bernard et al., 2004; Sitzmann et al., 2006). A more recent analysis by the U.S. Department of Education (2009b) compared face-to-face, purely online, or hybrid (mix of online and face-to-face) conditions and found small but significant effects for student learning favoring hybrid conditions most, followed by online, and then face-to-face. Still, public and programmatic accreditors in particular remain cautious about the quality of online learning. A number of states and accreditors—especially programmatic accreditors—maintain requirements on the proportion of the degrees delivered through online instruction. This tends to be true especially in programs with significant human service or educational components.

A second area for support of working students is in addressing how work impacts student learning. Regarding learning outcomes assessment, there is little consistent research pointing to a generalized impact, either positive or negative, of work on student learning (Pascarella & Terenzini, 2005). The only general impact on student learning occurs if the work hours exceed 15-20 hours per week, limiting time for studies. There may be more specific relationships to student learning dependent on the particular learning outcomes and program of study; for example, when specific professional or organizational skills, like running a meeting, are included

within a learning outcome, or when work experience is directly related to the curriculum. This is likely to occur in experiential education such as internships, field experiences, or practica. Outcomes assessment data from these experiences can be readily gathered through the use of self-assessment, supervisor evaluations, or coordinator evaluations (Palomba & Banta, 1999).

Institutions can be more deliberate about reinforcing the potentially positive impact of employment on student learning and engagement and can shape the evaluation and feedback from their on-campus employment opportunities (Lewis, 2010). Simply having faculty who recognize and ask about student off-campus employment can serve to mediate the impact of employment on student outcomes (McCormick, Moore, & Kuh, 2010).

Institutions can also focus on improving the training and changing the assumptions of faculty and staff who work with employed students so they better understand learning style differences in the classroom between traditional and older working students (Wyatt, 2011). Institutions can also design the campus experience outside the classroom with the working student in mind (e.g., flexible hours for services, multiple service sites, among others). Finally, efforts of faculty and staff to recognize and value the contributions of employed adults, both professional and otherwise, can go far to significantly promote levels of student engagement and learning. This can be especially true when working students are highly conscious of having taken an academic path different from the traditional student (Cox, 2009; Wyatt, 2011).

Institutional recognition of the multiple educational paths for working students is also important to these students' success. It should not be assumed that working students will necessarily start off or aim to finish in the same place (institution and program) as traditional students who do not work or work only minimal hours. Many working students are often transfer students who may not only bring in credits from previous higher education experiences, but have alternative credit transfer options based on their prior experiences.

There are a variety of credit transfer options, but for working students, the most applicable may be prior learning assessments (PLA). PLA can be awarded through a variety of methods including assessment of student portfolios, military training, customized exams, and standardized exams such as the College Board's Advanced Placement (AP) and College Level Examination Program (CLEP) exams (Klein-Collins, 2010). Students who are awarded PLA credit have been shown to have higher degree-earning rates and graduation rates, and to persist further, than students who did not (Klein-Collins, 2010). Despite the success of PLAs, recruiters and advisors should be aware that unaccredited institutions sometime use PLAs as a way to lure students and promise a shorter time to degree (Council on Higher Education Accreditation, 2010) while others may use them as a method to increase adult enrollment (Fiddler, Marienau, & Whitaker, 2006).

It is important for institutions to consider the degree goals and credit transfers of working students because of the influence they can have on institutional efforts and outcome profiles. Non-degree seeking students who work may be taking a course strictly for professional development or continuing education. This group of students is often treated differently than degree seeking students when reporting internally and externally. Furthermore, working students

may have no intention of completing their degrees, but rather take just enough courses to meet the criteria for receiving a raise or promotion at work. These students can negatively influence the institution's retention and graduation rates, which will require context when reporting. As such, institutions enrolling these types of students might collect data from the students at the time of admission about their educational goals.

Data Strategies for Supporting Working Students

A significant challenge for institutions is in how to measure and analyze data on working students. The specific challenges faced include being cognizant of working student degree goals and credit transfers, and being able to measure and contextualize the impact of work on common institutional measures and student learning. Data on employment by students at an institution can come from several sources. A primary one is efforts by the institution to collect this information from the individual student. This may occur as a part of other college or university processes (e.g., admission or graduation forms) or it may occur as part of regular surveys of students and alumni. The former may ensure much greater coverage of the student or graduate population while the latter may allow for broader collection of information including post-graduation assessment of the educational impact on career success. Essential questions on these instruments may include: hours worked, on- versus off-campus location of work, field of employment, position, and employer. Several critical aspects of this include timing (before, during, or after school experience) and benchmarking (use of employment categories which allow broader comparisons such as used by the Bureau of Labor Statistics).

Several standardized survey instruments contain a few questions regarding employment data. For instance, the National Survey of Student Engagement (NSSE) and Community College Survey of Student Engagement (CCSSE) are two of the major assessments available containing information on working students. Similarly, the Cooperative Institutional Research Program (CIRP) offers two surveys that include questions related to student employment. The questions regarding working students on these surveys typically ask respondents to self-report the number of hours they spend per week working for pay. Some of the instruments also make the distinction as to whether the working student's job is on or off campus. These instruments have the major advantage of providing national or sub-group comparison data, but have the disadvantage of only including a few points of comparison.

Those conducting programmatic and institutional assessment should be aware of the potential availability of state sources of employment data on students and graduates. The National Center for Higher Education Management Systems (NCHEMS) provides a wealth of comparative data indicators on education, employment, health, and civic and economic development at the county and state level, which although directed at demonstrating the impact of higher education institutions, can readily serve as contextual data for studies on working students. Likewise, state government offices and statewide higher education offices may collect information about employment of students and graduates. Data from these sources may not be

readily apparent on public websites but otherwise easily secured through direct contact with these offices.

Contextual issues are a central concern when interpreting data on working students. Providing context to the metrics about working students is important for the sake of making sure the data are not unintentionally misleading. For instance, working students may be more at risk to take a leave of absence or stop-out (Furr & Elling, 2000). This would influence the amount of time it takes a student to complete his or her program. Working students are less likely to establish connections with faculty and other students, and have less time for attending classes and doing school work (Johnson & Rochkind, 2009). This puts them at risk for dropping out of the institution and, therefore, affecting retention and graduation rates. It is important to remember that many external reporting requirements surrounding working students are only required for first-time, full-time freshmen. A student may start full time, but end up taking a job and reducing to part time. Institutions are still required to report on this student as being part of the first-time, full-time freshman cohort, and as such will contribute to the cohort's lower graduation rates and longer time to degree statistics.

Conclusion

The high proportion of working students in colleges and universities is a phenomenon that has emerged during the past four decades of American higher education. The proportion of these students encompasses nearly half of full-time and the vast majority of part-time students and is unlikely to change in the near future. As a result, institutional administrators, faculty, and staff have gradually come to understand and appreciate the factors behind the working student experience including the nuances between different types of working students such as students who work and employees who study. These important factors include on-campus versus off-campus work, financial aid and economic drivers of work, the relationship of age and family responsibility to work, and even the number of hours worked. While the impact of the work experience on student learning can be positive, high numbers of work hours clearly present an attrition risk.

With this increased understanding, a range of different strategies for college and universities to support the working student need to be available at our colleges and universities. These strategies can range from the institutional level to that of the individual classroom. Higher level responses may include partnerships for fostering supportive employment experiences for students, using institutional data to further understand the working student experience, putting courses and programs online, prior learning assessment, and building specific elements such as internships or feedback from employers into academic programs. Strategies on the level of individual faculty and staff may include simply the recognition of how the professional experience relates to the course content and customizing support services to the schedules of working students.

Among the most critical findings from research on working students is that, under certain circumstances, the employment experience of working students can be linked to positive student outcomes in learning and persistence. Moreover, these circumstances can, in turn, be influenced by institutions. Ultimately it is those institutions that recognize the particular experiences and needs of working students that will be successful in serving those students.

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Addressing the Needs of Underprepared Community College Students

Charles Van Middlesworth
Achieving the Dream

The topic of student success has been a frequent focus of discussion over the past few years, along with the increasing cost of higher education. The discussion of student success often focuses on topics such as low performance courses, student preparedness for college, and low graduation rates. There is a tendency to attempt to find the one or two reasons that impede student success. If the focus remains limited to several issues, the discussion becomes "what do we add" to the curriculum and should the requirement be mandatory or optional.

Student Preparedness

Take the three aforementioned topics associated with student success: low performance courses, student preparedness for college, and low graduation rates. Low performance courses are those courses where the success rates, grades of C or better, fall to a level that is lower than what is expected. Prior to beginning a discussion of student success, those responsible for coordinating such work should develop a strategy to examine low performance courses. Questions worth asking are: Where are these courses within the curriculum? Do they present academic challenges for those matriculating to certain programs or fields? Are the students enrolling in these courses academically prepared for them? Are the entering students prepared for the academic rigor expected by the institution?

The topic of low graduation rates tends to make for interesting conversation since the criteria for determining what a graduation rate is, how it should be calculated, and making the determination of what is an acceptable rate are debatable. What colleges understand is that improving student success translates into improved student persistence across terms or years, students completing courses and eventually earning a credential (Rutschow & Schneider, 2011).

Obstacles to Success at Community Colleges

The community college enrollment pool differs from that of a four-year residential college or university in a number of ways. A majority of the students attending community colleges attend part time, are employed, and have families who compete for their time and attention. Enrolling part time means students take longer to earn a credential, and more frequently drop out as their life circumstances change.

The enrollment process often requires students to take a placement exam to determine whether they are prepared to enroll in college-level English or math courses. Depending on their scores, a student may need to enroll in remedial English and/or math courses prior to enrolling in college-level courses. The lower their placement test scores, the greater number of remedial courses required, often extending the number of semesters a student must enroll in prior to taking courses for a program or degree. The magnitude of the impact of remedial course placement can vary by students' age, gender, race/ethnic affiliation, or socioeconomic status.

In addition to placement exams, there are other requirements that can create obstacles for potential students. Navigating the enrollment process can be confusing for students entering college for the first time. Many institutions have streamlined their enrollment process in order to accommodate as many students as possible. Many of the standard events and activities associated with enrollment have been made optional in order to facilitate the flow of students completing the enrollment process. The reality for new students enrolling in courses for the first time is that they are met with a bifurcated course selection process; that is, students will either begin their enrollment in remedial courses or be channeled to enroll in college-level courses. Course selection is determined by which route the student takes. The magnitude of this choice becomes apparent as students navigate the enrollment process by answering questions such as: What is your major or area of study? What times do you want to attend classes? How many classes do you want to take this semester? To the sophisticated or experienced student these are questions easily answered, but to students unfamiliar with college and its beginning-of-the-semester rituals, this can be confusing. Many students new to the college experience are unfamiliar with the process of entering college and may not know what questions to ask and/or to whom they should be asked. This often results in students enrolling in courses that they are not prepared for, or enrolling in courses that they are over-prepared for that will not count toward their degree or credential.

It is important for institutions and their administrations, faculty, and staff to recognize that addressing student success is complicated and requires constant attention to the retention-related data if done correctly. To adequately study student success, it is necessary to examine all aspects of the college. Using the concept of a holistic approach from anthropology means to collect data from all aspects of the college experience and examine the relationships between those experiences. The greatest benefit a college can derive from focusing on student success is to begin with a conceptual model that is data-driven. This model should include information and data not only about instruction, but also about leadership, policies and procedures, student services, enrollment processes, and course scheduling, to name a few. There should also be outcome metrics from which to gauge institutional progress.

An important national player for student success is Achieving the Dream. Achieving the Dream is a national reform network focused on community college student success. The network is comprised of 200 colleges and 34 states, including the District of Columbia. Using data to guide decisions is an important part of Achieving the Dream (http://www.achievingthedream.org). Five metrics or indicators of student success adopted by

the Achieving the Dream (ATD) movement are helpful in tracking student success. The ATD measures of student success which all institutions should track are conceptually linear as they represent the five important milestones a student encounters when he or she matriculates through the institution. The five measures are: (a) success in developmental courses, (b) success in college gateway courses such as English and math, (c) success in college-level courses, (d) term-to-term and year-to-year persistence, and (e) graduation or earning a credential.

Impact of Developmental Instruction

Until recently, most colleges required entering students to take either a college placement test (ASSET, COMPASS, or ACCUPLACER) or to have a minimum ACT or SAT test score to determine if they were academically ready to be enrolled in college-level English and math. The test scores were used to determine whether a student required remedial course work and the level at which that work would begin. For instance, if a student were required to take remedial English, his or her score would identify the level at which to begin. English preparation may begin with a course one or two levels below college-level English. Placement two levels below college level would require the student to take one remedial course per semester for the first year of coursework, and, if successful, to enroll in college English the first term of his or her second year of college. Placement into math courses could place a student, if at the lowest level of remedial math, three levels below college-level math. If a student placed at this level, he or she would be required to take a remedial math course each semester for three semesters prior to enrolling in college-level math. These sequences of courses lengthen the amount of time a student would be delayed in enrolling in program-level courses.

In addition, the amount of time to college-level course enrollment can be lengthened if the student is not successful in his or her first attempt at remedial course work (Bailey, 2007). The success rate for students enrolled in each of the possible levels of remediation varies. Data show (Bryk & Treisman, 2010) that the greater the number of semesters of remediation needed, the lower the success rate. Students needing remediation have a greater chance of being successful if they begin at one level below college level. It is unclear whether personnel conducting the placement assessment are as candid with students as they should be. Many colleges may not be articulating to students that the placement test is a high-stakes test. The results from this test can burden students with two to three semesters of remedial course work, dramatically influencing their chances of completing a program of study in a two- or three-year time frame (Bailey, 2007).

Growing Distrust of Placement Test Scores

Placement tests have long been used to determine the preparedness of a student for enrolling in college courses. The motivation for requiring students to take placement tests has been to create a support service that levels the playing field for those students entering college who are less

prepared. This is a policy that has been implemented on a routine basis across the country by most community colleges. Recently, there has been discussion regarding the worth of requiring remediation based on test scores (Boylan & Saxon, n.d.; Collins, 2008). Some of the debate focuses on the students whose scores are just above or below the "cut score." Opinions vary (Collins, 2008) about whether being five numerical points below the cut score for college English or math signals that a student with this score would not be successful in the course. To answer this question many colleges have created a "decision zone" where a student's score can be reviewed through examination of their transcript, participation in an interview, or the taking of a writing test or a short math quiz to determine their readiness for college-level English or math. Decision zones are also used as a way to directly diagnose the English or math skills the student is lacking and address those directly rather than having the student take a 16-week remedial course (Collins, 2008).

Community colleges have recognized that having students enroll in a 16-week remedial course to address a specific weakness may not be an effective use of a student's time. Students required to take remedial courses, especially those at the lowest level, have a tendency to withdraw from college at greater rates than their college-prepared counterparts (Bailey, 2007). Placing students in a course appropriate to their skill level is an important aspect of embracing student success. Placing students in the appropriate course may mean having them enroll in a mini-course or an instructional module that addresses the specific skills students need to progress toward a degree or credential (Boylan & Goudas, 2012). In the past few years this modularized approach has been developed to address those skill issues needed for the students to advance to college-level learning as well as to shorten the amount of time to complete their remediation requirements.

There is an analogy commonly used to distinguish equality from equity using shoes as an example: If I want to treat everyone equally I will give each person a pair of shoes, but if I want to embrace equity I will give each person a pair of shoes that fit. This analogy is appropriate when discussing student success. Embracing equity means students receive the appropriate instructional intervention, advising, student support, and mentoring for them to succeed.

Math as an Obstacle to Student Success

As has been mentioned, the greatest academic barrier to success for students requiring remediation is developmental math. As the number of additional remedial math courses a student must take increases, the percentage of those moving on to subsequent courses decreases (Bailey, 2007). Bryk and Treisman (2010) note that remedial math presents an academic barrier that is nearly insurmountable for many students. In order to obtain a degree or credential, students must pass a college-level math course, and of those who do take that course, the majority do not pass and must take the course again. For many it becomes a continuous cycle of enrolling in remedial math, failing remedial math, and re-enrolling in remedial math, until the student either succeeds or drops out of college altogether, too often the latter.

Successful Math Interventions

To address the issue of remedial math stagnation, several organizations joined together with the Carnegie Foundation for the Advancement of Teaching "to create an innovative, transformative strategy in undergraduate mathematics education," the Community College Pathways (CCP) program (Bryk & Treisman, 2010, p. 1). As a result, two structured pathways were created: Statway*TM* and Quantway*TM*. The Statway*TM* pathway is a developmental math intervention designed for students planning to transfer and major in the humanities or the social sciences. The course can be completed in two semesters and meets the requirements for college-level math. In terms of content, the Statway*TM* pathway is focused on statistics, data analysis, and quantitative reasoning. The year-long experience concentrates on statistical content with requisite arithmetic and algebraic concepts taught and applied in the context of statistics (Strother, Van Campen, & Grunow, 2013). Statway*TM* online materials were launched in 19 community colleges in five states in August 2011 (Strother, Van Campen, & Grunow, 2013).

The second pathway, Quantway*TM*, provides an alternate and accelerated pathway designed to motivate and engage students with an innovative quantitative reasoning focus in which students use mathematics and numerical reasoning to make sense of the work around them. The aim of the Quantway*TM* pathway is to promote success in community college mathematics and to develop quantitatively literate citizens. This pathway includes an intensive student engagement component within the classroom environment focused on increasing student motivation and tenacity. The curriculum includes the information and the skills needed for academic success as well as tools that will help students to navigate college (Strother, Van Campen, & Grunow, 2013). The Quantway*TM* pathway was launched January 2012 in eight community colleges in three states (Quantway, n.d.).

Statway*TM* and Quantway*TM* instruction is not confined to learning strictly math concepts and materials; students also acquire information about how to learn, persevere, and succeed academically. Within the pathway model, developers have redirected their focus from stressing persistence to something they call "productive persistence." Productive persistence is a package of skills and tenacity that students need to succeed in an academic setting (Silva & White, 2013, p. 5). Implementation goals are ambitious with first semester developmental math success forecast to exceed 50% for both Statway*TM* and Quantway*TM*. The first-year success rate for students using the Statway*TM* pathway was 51% as compared with a traditional developmental math instructional approach of 15%, and with one semester of data, the success rate of the Quantway*TM* pathway was 56% as compared with 21% for the traditional math approach (Silva & White, 2013, p. 5).

Researchers developing the pathway model looked to technology and health care fields to develop an improvement science approach which focuses on "an evidence-based hypothesis, tests it in practice using a disciplined method of documenting successes (and failures), and then scales what works" (Silva & White, 2013, p. 6). The results suggest that to reform developmental math instruction will require researchers and practitioners to work together, using their

"collective knowledge to test, refine and then scale improvements" (Silva & White, 2013, p. 6). Carnegie developed teams to focus on productive persistence by studying student retention and success, with faculty focusing on using that data to develop and test strategies to improve student success. During this research Muhich and Yeager et al. found that "most of the research and practice on improving students' study skills paid no attention to students' underlying beliefs about and motivation for learning" (in Silva & White, 2013, pp. 7-8).

The underlying foundation to productive persistence is that not only do faculty need to focus on developmental math instruction, but also on how students view their learning and the social connections they have with that learning. It is clear that if developmental math instruction does not include developing strategies to change student mindsets about developmental math, then we cannot expect our current success results to change. The pathway model's focus, to develop "strategies to help students persist and succeed in math," means "changing students' mindsets, adding relevance to the rigor of mathematics, and diminishing students' sense that they don't belong" (Silva & White, 2013, p. 8).

MyMathLab

MyMathLab is an instructional model that focuses on course redesign intended to increase the quality of instruction as well as improve efficiency in large enrollment introductory courses. Its course redesign model is a data-driven innovation allowing faculty to redesign their courses to be more effective in the use of time, "increase student time on task and engagement in course material, and . . . reduce . . . student costs" (Speckler, 2013, p. 1). MyMathLab is produced by Pearson and is designed to move students through developmental math requirements toward gatekeeper math courses. For an instrument like MyMathLab to be effective, the faculty responsible for its implementation need to embrace the changes that will be necessary to effectively impact student math performance. Critical to the process is a discussion identifying the problems to be solved. Student performance data are a helpful addition to the discussion because performance data illustrate the current outcomes for math students. Speckler emphasizes that for institutions to be successful with course redesign it is important for the college to have "both institutional commitment and strong leadership" (2013, p. 4).

Course redesign consists of taking existing developmental math courses and dividing course content into modules, thereby eliminating duplication of topics from one course to the next. Eliminating duplication allows "students to progress to the next course in the sequence upon completion of the previous course at any time during the semester" (Speckler, 2013, p. 5). Some colleges that have adopted the course redesign model have reduced three developmental math courses to ten modules. In their new module-based courses the number of modules determines whether the instruction will be a stand-alone, one-credit course or divided into larger module configurations. The number of modules comprising each course also determines the length of the course in weeks. Colleges have simplified course registration by creating shell courses. "In the shell course model, students registered for a four-credit course if they needed to

complete at least four units to qualify for their desired credit-level math course. Students who needed to complete just one, two, or three units to reach their exit point registered for a one, two, or three credit shell course" (Speckler, 2013, p. 5). The typical arrangement is for one-credit shell courses to meet for four weeks, two-credit shell courses to meet for eight weeks, and three-credit shell courses to meet for twelve weeks.

Colleges using MyMathLab have reported success gains of 26% for algebra courses over the same period of a previous year (Speckler, 2011). Gains such as this are only possible if faculties ensure their students meet the expectations for the course, such as attend lab as required, meet deadlines for assignments, and seek assistance if confused. To facilitate lab attendance, some colleges have adopted the Emporium Model. The two versions of the model consist of a flexible attendance model and a fixed attendance model. The flexible attendance model is designed to schedule mandatory lab hours that can be completed at the student's convenience, whereas the fixed attendance model has mandatory lab hours that must be completed according to the institution's schedule for specific student cohorts. Some colleges have begun using the Emporium Model for their developmental delivery (The Emporium Model, n.d.).

English

Institutions face similar challenges in moving students to complete developmental English and enroll in the gatekeeper course English 101 that they do with developmental math courses. An intervention that is gaining popularity is the Accelerated Learning Program (ALP). The Accelerated Learning Program differs from traditional approaches in which a student must complete developmental English prior to enrolling in English 101. Accelerated Learning Program students testing into the upper level for developmental English can enroll in an ALP course and gatekeeper English 101. If a student makes the choice to enroll in an ALP course they are mainstreamed into English 101 and 102 (Cho, Kopko, Jenkins, & Jaggars, 2012). Students enrolling in ALP classes have the same instructor for developmental English and for English 101. Enrollment in the ALP course is restricted to eight students per section based on the notion that reducing class size increases the likelihood of success in English 101. As with similar approaches in math, ALP seeks to have students complete their developmental education requirements and move to college-level courses as quickly as possible.

Achieving the Dream leader colleges that use ALP have reported course completion increases over non-ALP students of 35% to 40% (Promising Practices, n.d.). Leader colleges are veteran Achieving the Dream colleges that have demonstrated commitment to and made progress on the network's five principles: Committed Leadership, Use of Evidence to Improve Programs and Services, Broad Engagement, Systemic Institutional Improvement, and Equity. These colleges have also shown three years of sustained student success improvement (http://www.achievingthedream.org). Research has also found by tracking ALP students over longer periods of time that they persist to the next year in greater proportion than non-ALP

students (Cho, Kopko, Jenkins, & Jaggars, 2012). This study also examines assumptions made by critics of ALP programs regarding whether or not ALP students will "struggle in college-level courses by earning lower grades and pass rates," whether "instructors of accelerated classrooms will lower their standards in order to avoid failing large number of students," and whether the "performance of college-ready students will suffer in the presence of underprepared students" (Cho, Kapok, Jenkins, & Jaggars, 2012, p. 23). Evidence supports that ALP students did not experience or cause any of the concerns noted above.

Developmental Course Completion in General

There are frequent discussions across community colleges regarding how to improve developmental education so more students can matriculate to college-level courses. Improving developmental education means developing, evaluating, and analyzing data associated with activities or interventions that work to promote student success. This means not only improving instruction but also policies and practices to support students. Colleges have looked at many of their policies that may be impeding students such as establishing a zero week between the end of registration and the first day of classes. Research shows that students who late enroll tend to have higher withdrawal rates than students who do not late enroll (Promising Practices, n.d.; http://www.achievingthedream.org/campusstrategies/strategiesatachievingthedream, n.d.).

Student Coaches

Institutions have employed the use of student coaches to assist those students with the struggles many experience meeting academic demands as well as those demands external to the college. Student coaches provide a lifeline to those students who are less academically prepared and lack the safety net available to other students (Hoover, 2011). Colleges have also required weekly attendance in tutorial lab sessions for all students enrolled in developmental courses. Also provided is access to individualized assistance through multiple formats such as group sessions, peer tutoring, and online assistance. Some institutions have found space during the revision of their developmental education curricula to incorporate required study skills and motivation for students. As colleges look to improve developmental education, implementing programs like ALP and better aligning placement tests with the curriculum will provide students with better options and quicker movement to college-level coursework (Promising Practices, n.d.; http://www.achievingthedream.org/campusstrategies/strategiesatachievingthedream, n.d.).

Supplemental Instruction

Supplemental Instruction was created by Deanna C. Martin in 1973. Her task was to create a program that could reduce the attrition rates of minority students in the schools of medicine, pharmacy, and dentistry (Avdiu, 2006, p. 9). Supplemental Instruction (SI) is a non-remedial

approach providing peer assistance for targeted historically difficult courses. Students are assisted by other students who have successfully completed the course. Peer-assisted study sessions take place outside the classroom and are designed to help students improve study habits and note-taking skills. For the best results with SI, peer tutors need to attend the same course as the students, listen to the same lectures, and take notes during class. This fixes study sessions within the same context the students' experience in the course and enhances the learning process when students discuss course material, compare notes, and work with others during test preparation time. Students are encouraged to participate actively in discussions and other review session activities. For Supplemental Instruction to be successful students must attend SI sessions on a regular basis; the overall benefit for students decreases the fewer sessions they attend. The overarching purpose of Supplemental Instruction is to improve student success in courses and retention in college, thereby reducing course attrition rates (Avdiu, 2006, p. 9). On a macro level implementation of SI could increase graduation rates across the institution.

Colleges have found that focusing on historically difficult courses can increase the likelihood of students to enter programs and fields they would otherwise not qualify for, such as health care, engineering, or education. Tutoring and learning labs have been used by colleges for some time; however, institutions making an investment in personnel, facilities, and time have shown they can increase success rates for students enrolling in their historically difficult courses by 20% (Promising Practices, n.d.; http://www.achievingthedream.org/campusstrategies/strategiesatachievingthedream, n.d). To improve success and reduce course attrition, the challenge for most colleges is the cost of scaling up SI to meet the needs of programs.

Student Success Courses

Student success courses come in a variety of different forms and styles. Student success courses are designed to help entering students with topics or issues that are not considered to be academically oriented. These courses contain topics such as how to study, instructions on navigating the various offices and departments across campus, time management, and setting career goals. Opinions vary as to what the course content should contain as well as whether limited resources should be expended for a course seemingly designed for underprepared students. Many faculty members openly question the "soft" content of such courses and feel that if a student success course is required its content needs to be linked with academic or career program content. Some institutions have used student focus groups for suggestions of what topics should be covered in a student success course.

Paul Fain—in an article written for Inside Higher Education, "Success Begets Success" (2012)—suggests that students who complete student success courses are more likely to be retained than students who do not complete a success course. Although student success courses are promoted and endorsed by student services personnel as an option that would benefit all students, academic leaders question the cost of scaling them up if such courses are required for

all students. Obviously, larger institutions with more entering or new students would have greater scale-up costs; however, Fain's (2012) article identified six different community colleges that have reported increased retention rates 20% to 30% higher for those students completing a student success course. Advocates for student success courses believe that success rates for those students completing such courses can be extended to persistence across terms and eventually earning a credential or degree. Research conducted by the Community College Research Center (CCRC) found that student success courses are worthwhile and have a positive effect on a "student's chances of earning a credential, persisting, or transferring" (Zeidenberg, Jenkins, & Calcagno, 2007, p. 5). The overall positive effect statistically appears to be marginal, though more rigorous research is needed to examine the relationship of these courses to student success in college (Zeidenberg, Jenkins, & Calcagno, 2007).

Preparing Students for College and Life

Many students at community colleges do not associate student services with being a vital part of success in their academic program, but professional staff, advisors, and counselors can play a prominent role in guiding students to make decisions about their academic life as well as developing life goals. Within student services, college personnel exist to assist students with questions about college policies and services as well as to provide individualized counseling or help match personnel with career exploration options. Students are encouraged to empower themselves by taking responsibility for their academic work as well as their personal and work lives. Academic advisors assist students with decisions throughout their academic experience, but ultimately, students are responsible for meeting all college requirements, for being successful in courses, and for meeting graduation requirements in their chosen field. For community colleges, under the guise of customer service, policies and regulations, when implemented, are designed to help students. However, too many student affairs policies and regulations often are presented to students as being optional. This results in many students opting out of the services or ignoring policies that could enhance their academic progress.

Assess Why Do We Do What We Do

Each office or service across the campus should periodically ask themselves the question "Why is this policy written like it is, and why do we do what we do?" For example: For years some colleges would extend their tuition pay periods in order to avoid losing student enrollment. These colleges would keep extending the date for payment due until they were certain the students would pay their fees. While an altruistic act by the college, this lengthens the payment process and extends the decision-making window for students to commit to paying their tuition and fees. It does not take too many payment extensions for students to recognize that the real payment due date can be months after the published date. One reason given for extending payment dates is to accommodate lower-income students' ability to pay. It is believed that failure to provide an

extension for payment may force a student to drop all courses and exit the institution. Another scenario is that dropping students for non-payment will cause enrollment numbers to drop, thus impacting an institution's budget. The impact on enrollment is a concern, but colleges need to look at their data and determine if by extending payment deadlines they are really providing a viable service to students.

Mandatory Orientation/Advising

An important aspect of student success is to ensure that entering students receive the correct information about their enrollment and know where to go and who to contact if they have any questions. This sounds simple but in practice may not be the case. For instance, a recent review of several Achieving the Dream colleges found that not all new students were attending an orientation session, that to students advising meant registering for classes, and that students believed the best source of information was other students. These colleges are seeking ways to provide meaningful advising to more students, with appropriate interventions when circumstances warrant such action.

When colleges speak of meaningful advising they often refer to a case-management approach, which consists of a series of visits over the academic year rather than a single advising session prior to enrolling for classes. The case-management approach to advising works especially well for high-risk students. Some institutions assign a student success coach to high-risk students. As issues present themselves, the coach is available to work with the student to resolve them. Some colleges use an enhanced advising system designed on a road map theme providing students with guided sequential steps to achieve their educational goals. Other colleges have created one-stop learning centers for advising, counseling, and tutoring. One stops are useful because they provide the support services students need in one location. Should a student need to speak with an advisor and a tutor, they are in close proximity so students are able to receive coordinated advice from both at nearly the same time (http://www.achievingthedream.org/campusstrategies/strategiesatachievingthedream/resourcesforcollege/).

Some colleges have created an advisement coordinator position in which the advisement coordinator supervises the advisement activities from, as it were, 5,000 feet, stepping back and evaluating the overall process. The coordinator's tasks might include reviewing all registration policies and procedures and then ensuring that advising is a part of those activities. Other colleges are recommending extending the requirement for mandatory advising for all students taking developmental coursework until they have earned 30 credit hours (http://www.achievingthedream.org/campusstrategies/strategiesatachievingthedream/resourcesforcollege/). Even further than this, colleges could require all first-time-in-college students to receive advising as an important first step toward student success. Students need to recognize that missing the regularly scheduled orientation sessions does not mean orientation can be

ignored altogether, while colleges need to make a concerted effort to ensure that all new students attend a new student orientation session.

Student Engagement in Programs of Study

Jenkins and Cho (2012) noted that community college students have lower completion rates because many students do not enter in a program of study when they enroll at their college. The authors believe community colleges present too many options for students without clearly identifying educational goals. Many community college students facing developmental course work are further removed from entering program coursework (Jenkins & Cho, 2012). Reform efforts have focused on improving developmental education enabling students to pass gatekeeper English and math; however, the reform efforts have done little to help students "enter and complete college-level programs of study" (Jenkins & Cho, 2012, p. 2). The value of the college experience is to interact with a discipline or a field of study. Program faculty need to share some of the responsibility by actively recruiting students to their field of study. Through the recruitment of students to their programs faculty also assume responsibility for familiarizing students with the curriculum, its completion standards, and requirements for graduation (Jenkins & Cho, 2012).

Jenkins and Cho believe colleges need a simple method to measure their effectiveness for attracting students to a program (entry) and for their effectiveness in getting those students to then complete the program. Using major codes or students' stated education goals, collected during enrollment, have been found to be less than reliable metrics for this type of research. The authors suggest using nine credit hours completed in program courses as the metric to determine who is actually a program participant versus those taking courses to determine whether they have a potential interest in the field. "It presents a simple method that community colleges can use to begin to measure rates of program entry and completion using data on students' actual course-taking behaviors rather than on their declared program of study or intent, which can change and are unreliable indicators of student behavior" (Jenkins & Cho, 2012, p. 3).

Once students are enrolled, longitudinal tracking is a technique used to track a student over multiple terms or years. Longitudinal tracking "through intermediate milestones makes it possible to identify where along their educational pathways students are likely to drop out and thus where colleges should focus their efforts to improve student retention" (Jenkins & Cho, 2012, p. 4). The authors have identified what they call guiding questions for colleges' faculties and staff to use during the process of strengthening student completion pathways. Four stages, or milestones in the student's academic career, are:

Connection, identified as interest to program enrollment. Connection focuses on answering the question "How can we motivate and prepare entering students to choose a college-level program of study?"

Entry focuses on the period from enrollment to program entry, or answering "How can we accelerate the rate at which new students choose and successfully enter a program?"

Progress is the period from program entry to completion of program requirements—"How can we accelerate the rate at which program concentrators complete program requirements?"

Completion, the period from completion of credential of value to further education and labor market advancement, focusing on "How can we ensure that our programs prepare students for further education and (for CTE programs) for career advancement?" (Jenkins & Cho, 2012, p. 22).

This is a continuous process of examining and rethinking how the college does its business, interacts with its students, allocates resources to academic programs and student services, and defines and executes its policies and procedures.

Feedback From Students: Students Speak; Are We Listening?

One of the most thought-provoking books to enter the student success reading list is a work by Kay McClenney and Arleen Arnsparger (2012) titled *Students SPEAK—Are We Listening?* This book is for the educational practitioner who is interested in making adjustments to policies and practices that exist simply because "this is always the way we do things." Improving student success is the central point of this book. Its data, which form its foundation, were collected from a variety of sources, including student surveys, interviews, and focus groups (McClenney & Arnsparger, 2012).

With more than 50% of new students dropping out of community colleges prior to their second year and an equivalent number not enrolling for the next term, community colleges are taking a closer look at the front end of the college-attending process. The data collected and analyzed by McClenney and Arnsparger (2012) revealed a number of issues that immediately related to new students. A majority of the new students in their study were excited about attending college—looking forward to the experience and looking forward to another phase in their life. Along with their excitement was also apprehension, confusion, and a little fear as they began this new experience. Although we feel our community colleges are people-friendly and relatively easy to navigate, the students' comments revealed just the opposite. During open enrollment everything is chaotic, resulting in students standing in long lines, often not understanding the reasons for doing what the college wants. It is a situation of students not knowing what they don't know. In one area, it was shocking to students when they learned that 75% were tested and placed into developmental courses. Students were further shocked to find it would take two to three semesters to dig themselves out of the remedial pit (McClenney & Arnsparger, 2012).

As described above, over the years community colleges have made more and more support services, such as new student orientation, optional. For example, according to McClenney and Arnsparger (2012), half of new students did not attend new student orientation and less than 40% saw an advisor. Students were enrolled in the basic classes with little attention to the student's career goals or an effort to create an academic degree plan consistent with the

student's academic preparation. After the first three to four weeks many students began to realize that they were not prepared academically for the level of work in which they found themselves and needed help. Faculty expectations were high and the need for tutoring and other assistance was great if the students were going to succeed in the classes.

If community colleges are going to be the champions for student success within higher education institutions we may need to return to the time when we had requirements that are mandatory and in the best interest of students. "Optional" is a term that needs to be relegated to the dusty basement (McClenney & Arnsparger, 2012).

Importance of Scaling

Moving an educational activity to scale is a challenge for those involved with community college student success. The obvious purpose of moving to scale is the ability to impact a greater number of students with an educational innovation. Scaling up is the ability to move from a boutique-type intervention to one that can be administered to all students, expanding the benefit college-wide. Moving to scale also has its challenges. Coburn (2003) points out that scale must be defined and the definition must include "attention to the nature of change in classroom instruction, issues of sustainability, spread of norms, principles, and beliefs, and a shift in ownership such that a reform can become self-generative" (2003, p. 3). Scaling-up needs an operational definition if the context of the discussion is not to change over time, making previously collected intervention data questionable and of little use (Quint, Jaggars, Byndloss, & Magazinnik, 2013, p. 3). These realities need a considerable amount of buy-in from faculty, administrators, and staff to become functional at the operational level. Sustainability is an important consideration because scaling up an intervention from very small to a large, campus-wide program will have a direct impact on departmental budgets and the allocation of faculty work. Future commitments of time, talent, and treasure can have a huge impact on departments with limited resources and produce challenges for other departmental programs seeking growth and expansion in their particular area of academic interest. Principles and belief aspects can be particularly difficult to manage. For instance, faculty are known for presenting their programmatic content in ways unique to the specific faculty member. As such, suggesting a uniform way of presenting discipline data can create considerable push-back within the department. Working through these types of tensions can be emotionally draining and combative.

The notion that a reform can be self-generative assumes department-wide buy-in in order to perpetuate the activity over time. The greatest advantage of utilizing a conceptual model to guide change is the use of data or metrics to measure progress. Student success programs can use student data to determine which of their interventions have been successful and have reached the threshold for being considered for scaling institution-wide.

Term-to-Term Persistence

Student persistence or retention has been a topic discussed in research circles for more than 30 years. Colleges consider retention a very important topic because they recognize that the college cannot out-recruit retention. Keeping the students already enrolled is much easier, and less expensive, than recruiting a new group of students each term. As a planning metric, retention is usually measured in three ways: Fall-to-Spring retention, Spring-to-Fall retention, and Fall-to-Fall retention. The ratios associated with each retention time frame provide the institution with the number of students it should take in to cover losses experienced during each of the retention counting cycles. This form of analysis, longitudinal analysis, is often used to measure the persistence of students over several semesters and/or years and can relate retention statistics to specific interventions.

Achieving the Dream leader colleges have reported a number of interventions or strategies they have found helpful to improve student retention. These colleges recognize that retention begins as soon as a student enters the door of any college office. Since the placement test is one of the first orders of business, some of these colleges have developed a test-prep program for the placement test. It is not always clear to students that the placement test is a high-stakes test—for some, very high. Assisting students through this transition can enable a student to bypass one or more developmental-level courses. These colleges have also redesigned their new student orientation process, some creating an online version for students unable to attend the regularly scheduled orientation. Case management advising systems have been created so advisors can monitor the progress of students as well as keep detailed records about their educational goals and interest in possible programs of study, as well as their course performance. Mentoring programs have been used to encourage frequent contact with student service professionals. Some colleges have created a student success course designed to provide support to first-time students through their first semester. These community colleges have created learning communities for first-year students, some making them required for all students, while others have targeted only their first-time, full-time students (Promising Practices, n.d.).

Conclusion

This was a discussion of different efforts utilized by community colleges to improve the success of their students. This is far from a comprehensive account of all the activities, interventions, and strategies used by community colleges to make student success part of their institutional ethos rather than just a passing initiative. Community colleges have been fortunate in past enrollment cycles in that students who dropped out were replaced with another group of students entering the college with hopes of a better life. For years the community college philosophy has been to consider their students as adults, making many activities and services that normally had been required to be optional. The different types of student success activities identified in this chapter as innovative, such as student orientation, were previously a standard part of the enrollment

process. As noted in this section, it is obvious that more extensive research of student success is necessary to identify those strategies that are of the greatest benefit to students. Modularizing developmental math and English has potential but careful analyses of the implementation and its outcomes are needed.

The reasons behind failure can be systematically identified and programs put in place to remove obstacles to student success. Discussions and arguments about why students enter our community colleges and who is to blame for their failure are a waste of time for faculty, administrators, and staff, and are of little use to those who wish to become our students.

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Part 3

Supporting Student Retention and Graduation through Learning Assessment

Part 3 of the *Sourcebook* provides information on assessment activities that provide useful information on student learning and success. The chapters in this section outline basic issues and requirements for conducting effective assessment, the expectations of internal and external bodies for providing evidence of student learning, and the application of findings from assessment activities to decision making. Information is provided on an array of topics, from accreditation to student engagement to theory to experiential assessment activities. Guidance is provided on measures and assessment methods that provide information on student learning, theories that contribute to our knowledge of how students learn, and organizations that provide guidance and act as a resource for assessment activities.

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An Overview of Assessment and Its Role in Accreditation

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One may wonder why a chapter about topics normally associated with accountability rather than student learning and success would appear in this volume. We believe strongly that improved assessment, both at the institutional and disciplinary levels, increases the likelihood of improved student learning and, ultimately, success in college. Programs and institutions that engage seriously in assessment for improvement—the focus of accreditation requirements across the nation—should ultimately improve the potential for student success in those programs. Belle Wheelan, president of the Commission on Colleges, Southern Association of Colleges and Schools (SACS), perhaps best summarizes this view about the importance of accreditation (and of assessment within that context) as it applies to student success when she points out that the oft-used acronym for her organization, "SACS," should be thought of also as "Students are central to success." While this chapter will focus on the key issues involved with accreditation and assessment in the United States, it should always be kept in mind that, in the view of the authors and most of those involved in student learning assessment, student success is at the heart of those activities.

Staff members at all levels of institutions across the country are called upon regularly to support the efforts of their institutions, and programs within those institutions, to apply for or maintain accreditation. This involves providing data and analyses needed to support compliance with the standards of the agency granting the accreditation. Institutional research, assessment, and effectiveness staff provide key support at those institutions, as do faculty members. A recent survey of institutional research offices across the country reveals that these offices are involved in a wide range of assessment activities, including the assessment of student learning in general education, the major, and in student life. More than 90% of those offices report that they are involved in accreditation efforts at their institutions (F. Volkwein, personal communication, June 13, 2010).

Peter Ewell (2005) has addressed the relationship between assessment and accountability, including the role of accrediting organizations. As Ewell points out, regional accrediting

agencies in the United States have historically focused on improvement and now all require that institutions show they use the results of student learning assessments to make improvements. While our focus is primarily on regional accreditation within the United States,[1] we believe that the principles and considerations we identify apply to all accrediting agencies that have as part of their focus the improvement of student learning. With that role in mind, this chapter first summarizes the basic principles of student learning assessment, both for academic majors/programs and for general education. Second, it provides some important considerations for those who must manage assessment activities on campus, including the use of electronic/technological systems to aid in that management. Third, it includes some insights on the expectations of evaluators who serve on peer review committees. Fourth, in the last section of this chapter, we identify some regional expectations/trends.

The Assessment of Student Learning

Every regional accreditation agency requires institutions in their region to assess student learning outcomes and to use the results in improving programs. Some of the regional accrediting organizations—such as the New England Association, the Middle States Association, and the North Central Association—require the development of learning outcomes at the course level as well as the program and institutional level. Specialized or professional accrediting agencies often require the assessment of course-specific learning outcomes as well. For example, the Accreditation Board for Engineering & Technology, the Computing Accreditation Commission (ABET-CAC), and the Engineering Accreditation Commission (ABET-EAC) require explicit course outcomes that must be linked to program outcomes in the disciplines of applied science, computing, engineering, and engineering technology. The Association to Advance Collegiate Schools of Business (AACSB) prescribes some learning outcomes, particularly at the master's level. But whether an institution must assess learning at the course level or program level, the framework for creating learning outcomes and appropriate assessment strategies is similar. The outcomes should answer this question: What is the knowledge, skill or behavior we expect students to have as a result of the learning experience in our institution? The assessment of the outcome should result in evidence that helps to determine whether the outcome has been achieved. And, ultimately, the institution should be able to demonstrate that the information collected in this process has been used to improve the educational experience for students and to support student success as articulated by the learning outcomes.

[1] It should be noted that for a comprehensive orientation to accreditation within the United States, the Council for Higher Education Accreditation (CHEA) provides many resources to both its members and the public (see http://www.chea.org/). Among these resources are research and publications focusing on issues in accreditation, databases and directories of accrediting organizations, and information on international accreditation issues and agencies.

Learning Outcomes

Good learning outcomes must be clear and succinct, and should even suggest how they might be assessed. They should be about something that faculty care about and value, they should be achievable, and they must be measureable. For example, a "knowledge" outcome, such as "Students will demonstrate the ability to narrate and explain long-term changes and continuities in Western civilization or world history," is clear, achievable, and can be assessed through a paper or test or presentation. A "skill" outcome, such as "Students are able to interpret quantitative information (i.e., formulas, graphs, tables, models, and schematics) and draw inferences from them," is also clear, achievable and assessable. A "behavioral" outcome, such as "Students will engage in the artistic process, including conception, creation, and execution," also meets these criteria and might be measured in a student production such as an art show, a theater performance, or a musical production in a capstone course.

Developing learning outcomes depends on the level at which the outcome is targeted. For example, if the outcome is for a course, the instructor is usually the one creating the outcome. This might vary depending on whether this is a core course in the curriculum or an elective. The former is the responsibility of the faculty in that program; the latter is usually the purview of the instructor. In degree program assessment or general education assessment, faculty members have a collective responsibility to identify the appropriate learning outcomes. This process can be complex. It typically requires a faculty workshop or retreat in which faculty have time apart from the administrative tasks that take up department meetings to focus on what demonstrated competencies faculty expect from students. The organizer of the workshop, whether that is an institutional effectiveness or assessment professional, the chair, or a faculty member, should be prepared with an assortment of strategies to move this discussion toward a fruitful outcome. Reviewing examples of student work from an advanced course and collectively categorizing or grading them often help in clarifying what the outcomes should be. A good resource describing the process of running a faculty workshop on developing outcomes and assessment criteria can be found in Zawacki and Gentemann (2009). Examples of outcomes from similar degree programs or from general education can help as well. Using Bloom's Taxonomy is always a good idea. (For an updated version of this useful taxonomy of intellectual behavior, see Overbaugh and Schultz (n.d.).) Bloom's Taxonomy helps both conceptually and in providing specific language to support the development of outcomes.

Working with faculty to develop outcomes usually requires addressing some common issues at the outset. For example, faculty members typically begin with questions about why they can't use grades. This is a good question that requires a thoughtful response. Linda Suskie (2004, pp. 6-8) has a well thought-out response to this question, as do Volkwein and Yin (2009, pp. 141-143). In essence, the purpose of grading is not the same as assessment. The former provides a general statement to a student about how well he/she performed overall in a course and it helps differentiate students who perform well from those who do not. What assessment does is identify the specific areas where students in the aggregate perform well or need improvement.

Assessment provides information that allows an instructor or a team of faculty to make corrections to a program or a course to support better learning for all students. Thus, while assessment is done at the program level, ultimately its effects should be seen at the individual student level with improved learning and development.

Assessment efforts "take the temperature" of programs along the way as well as at the end, so that rather than making a summative judgment about a program, one can have formative data in order to make improvements. Sometimes these distinctions between summative and formative can blur, but the essential concept is that assessment is always about improvement and therefore must result in actionable information. Accrediting agencies are often looking for both summative and formative information that can or has been used to improve a program—summative information to ensure that programs are achieving their purposes, and formative to demonstrate that institutions will be able to make improvements. The burden for institutions is to do both. And both can be achieved if at least some assessments are done at the end of a program, say in a capstone course or at the conclusion of a set of required courses such as a series of required writing-intensive courses or a science general education sequence. The information collected can demonstrate the achievement of a competence in a certain field, and at the same time, be used to inform the program of weaknesses in the curriculum.

In order to obtain actionable information, there are commonly accepted standards for which most accreditation reviewers look. These standards are related to reasonable outcomes, good methodology, and use of the information. (A discussion regarding "best practice" expectations is found later in this article.)

Reasonable Outcomes

Reasonable outcomes for most accreditors include both student learning outcomes and program outcomes. Program outcomes differ from learning outcomes in that they are focused not so much on what students have learned, but on larger, programmatic expectations, such as the percentage of graduates of a degree program or the proportion of baccalaureate graduates who attend graduate school. There are numerous examples of online and print resources for developing good outcomes, both learning and program/process outcomes (see Erwin, 1991; Suskie, 2004; Bresciani, 2006; Maki & Borkowski, 2006). Simply put, a student learning outcome must be a clear statement of what students will know or be able to do. It should reflect course/program goals, be achievable, and be measureable. A program outcome is also a clear statement about the achievable ends of a course/program and must also be measureable. The data for program outcomes are often, although not exclusively, derived from existing, or fairly easily captured, institutional sources. A reasonable program outcome might focus on the skills students will use in their employment rather than the specific type of job they will have. For example, a good program outcome for an international public policy program might be: "Graduates will be employed in areas that require skill in a second language and/or knowledge of other regions of the world." An outcome that says that "Students will work in businesses that operate

internationally or in an international agency" is probably too specific and not achievable for most students.

Assessment Methods

A fundamental rule for any good assessment program is to use multiple methods. This is not only to increase the data points for a particular outcome, but is an acknowledgement that "none of the currently available measures or assessments in higher education that meet any reasonable standard of validity are up to the task by themselves of ensuring graduates' competence" (Murray, 2009, p. 62).

Examples and resources of good methods for assessing student learning are abundant. In addition to the resources cited above, the Association for Institutional Research (AIR) has a series on *Assessment in the Disciplines* that contains multiple ideas for good assessment practice. Volkwein (2009) discusses a full array of issues in assessment including a discussion of pros and cons of various assessment strategies. Regional accrediting agencies also offer specific guidance for their institutions. However, there are some basic best practices that cross accrediting agency boundaries and should be taken into account in any successful assessment program. These methods are discussed briefly here:

- Direct and Indirect
- Qualitative and Quantitative
- Embedded and External to the Curriculum
- Rubrics in Qualitative and Embedded Assessment

Direct and Indirect Measures

Direct measures assess the achievement of an outcome by employing expert judgment. Whether the expert judgment is manifested in the development of a test or rubric, or in evaluating student work by reading, listening, or observing, expert judgment is applied in the analysis of the achievement of the outcome. Indirect measures, on the other hand, do not require experience or expertise in the area being assessed. These measures usually require effort, skill, and methodological expertise, but they typically do not require content expertise.

Student learning outcomes must be assessed by direct measures, but they may be supplemented by indirect measures. Student exit surveys; national surveys such as the National Survey of Student Engagement; and metrics, such as the proportion of baccalaureate graduates who enroll in graduate school, the percentage of students who submit proposals to discipline conferences, and time-to-degree calculations, are all are good and useful indirect measures. Indeed, some accrediting agencies, including the Northwest Commission on Colleges and Schools and the Southern Association of Colleges and Schools, encourage, if not require, the use

of indirect measures such as graduation rates, alumni surveys, job placement rates, course completions, etc. Indirect measures are also useful as program outcomes.

Qualitative and Quantitative Measures

Definitions of qualitative and quantitative are sometimes discipline-specific. Typically, interviews or focus groups with students are considered qualitative and test scores are considered quantitative, but surveys are viewed by some social scientists as quantitative, while engineers and scientists consider surveys qualitative. In some disciplines, "putting numbers" on student assessments is difficult if not objectionable. In some, assessing writing using a rubric is a difficult adjustment. The reality is that both qualitative and quantitative approaches have value and either approach might be the right approach depending upon the outcome. In describing what constitutes a good outcome, we stated that the wording should almost lead to the way it should be assessed. Thus, if the outcome is that "students will be able to identify important questions/problems/issues," a rubric applied to a research paper and used by a team of faculty would be a good way to assess the outcome. If the outcome is that "[G]iven a quantitative problem, students will be able to formulate the problem quantitatively and use appropriate arithmetical, algebraic, and/or statistical methods to solve the problem," a test would be a good method. The notion that quantitative methods are better than qualitative methods is a false dichotomy. The method follows the outcome.

Embedded Measures and Measures External to Curriculum

Embedded measures are those measures typically applied in a classroom setting or a course assignment. Truly embedded measures are seamless for students. The measures are set in an assignment, a test, a project, etc. The activity is listed in the syllabus and is not extra to the curriculum, such as a survey sent to students online. In determining whether embedded measures are the best choice, consider several factors, but first decide the purpose of the assessment. Given that our discussion is about accreditation, we can assume the at least one of the purposes is related to meeting accreditation standards. Is that the primary purpose? Is curricular or program improvement equally, if not more important? Are state requirements one of the purposes? Practically speaking, can the assessment be conducted outside of the classroom and get sufficient student compliance?

If reporting is the primary purpose, testing (and surveys for indirect measures), especially standardized testing, will yield quantitative information that is relatively easy to report. However, institutions that do not have required tests that are taken as part of a testing day or a senior graduation requirement, or do not have a culture of student compliance with external surveys or tests, should be cautious in using this approach. Low response rates will effectively lessen, if not negate, the value of any test or survey. On the other hand, if an institution is able to get a high level of student compliance with external measures, it will typically get comparative

and trend data, the results of which are often relatively easy to tabulate if done locally, making feedback to the faculty relatively quick. Feedback is considerably slower, however, with nationally standardized tests that are scored off-site where it can take many months before an institution receives its results. It should be noted that some testing and survey providers such as the National Survey of Student Engagement have decreased the amount of time it takes to get results and, as in the case of NSSE, mini reports accompany the results making reporting to the campus constituency much quicker than in years past.

Standardized tests and surveys can help uncover curricular and program weaknesses that should be addressed and are particularly useful if the data can be analyzed at a degree-program level. However, if a department's curriculum is not well aligned with the standardized test, the department will have lost the program-improvement purpose of the assessment.

Embedded assessment's advantage is that it takes place in a course or a group of courses and is designed to address specific learning outcomes. If done well, embedded assessment techniques assess what is actually taught. Embedded assessment includes high levels of student motivation since the assessment is indistinguishable from course processes. There is a good likelihood of the process being faculty-driven and thus more likely to be used for internal improvement. There is also a greater likelihood that the assessment is linked to the curriculum of the institution, supporting program improvement. Feedback to the faculty is relatively quick compared to most nationally standardized tests. Good embedded assessment, created in conjunction with faculty and closely linked to the curriculum, yields actionable information that can be used to identify specific weaknesses and strengths in the curriculum. Poorly executed embedded assessment results in frustrated faculty and little action. Embedded assessment is not as easy to report to an outside agency, but if a rubric is used for analysis, summary statements can be made and often work well for reporting purposes.

Rubrics in Qualitative and Course-Embedded Assessment

Rubrics have become *de rigueur* for most assessment practitioners. Rubrics, scoring guides, and scoring criteria are used for grading, for course-embedded assessments, and for assessing outcomes in general education and the major. One reason rubrics have become so popular in assessment circles is that, with appropriate training, they support increased inter-rater reliability and promote the establishment of standards. Rubrics, when developed by faculty as a team, help clarify the purpose of a task or goal and help motivate discussions about curriculum. And, rubrics can be used to demonstrate to accreditors the rigor and quality of an assessment.

Rubrics are used by faculty to assess both general education and major competencies. Teams of faculty, often cross-disciplinary, begin with outcomes and create rubrics that can be used to assess portfolios, papers, projects, presentations, art work, etc. Faculty can begin from scratch, but usually their work is expedited by examining good examples of rubrics. *Assessing Outcomes and Improving Achievement: Tips and Tools for Using Rubrics* (Rhodes, 2010, produced by the VALUE project (Valid Assessment of Learning in Undergraduate Education) of

the Association of American Colleges and Universities, contains 15 excellent rubrics that could be used for major or general education assessment. But even the authors of this superb text suggest that these rubrics should be "tailored to particular contexts"(p. 11); in other words, rather than adopting a rubric as is, faculty groups should look at existing rubrics and tailor them to their own needs.

The *Introduction to Rubrics* (Stevens & Levi, 2005) presents a brief guide to rubrics and then provides examples of good rubrics. Maki and Borkowski (2006) have examples of good rubrics for doctoral work. The latter is particularly useful for doctoral program faculty who feel their fields are "unique" and not amenable to a standardized rubric. *Making the Implicit Explicit* by Barbara E. Lovitts (2007) is a very helpful guide for understanding how the use of rubrics for dissertations helps clarify expectations for doctoral students.

Validity and Reliability of Assessment Methods

Issues of validity and reliability are not addressed in detail in this chapter, primarily because with few exceptions accrediting agencies do not typically get involved in such matters. Nonetheless, it is important to bear in mind that no assessment measure is useful if it does not meet basic levels of validity and reliability. If the measure does not accurately reflect the concept that is supposed to be measured (validity), for example, it would be difficult to determine how or what to improve. Face validity is particularly important for faculty buy-in, which is why faculty should be involved in all steps of the assessment process. Reliability—the consistency of a measure over time—is particularly important with qualitative methods that utilize a rubric. Inter-rater reliability requires training of raters as well as ongoing monitoring to ensure that all raters consistently agree on their interpretations of student work. Standardized tests and surveys are usually tested for reliability and validity by the creators of the instrument, although usually not on your particular population of students.

Assessment of Majors and General Education

All of the processes described in the previous section are relevant to those planning the assessment of a major or assessment of a general education/core curriculum. Both quantitative and qualitative methods can be employed, embedded or external to the curriculum. Two good, nationally available tests for assessment of majors include the Major Field Achievement Tests (MFAT) with 13 discipline-specific tests that are available through ETS and the Area Concentration Achievement Tests (ACATS) with 12 discipline-specific tests that are available through PACAT, Inc., of Clarksville, Tennessee. Both can be very useful for departments, particularly those that want to compare their students' achievement with those from other institutions.

Tests that can be useful for measuring general education outcomes include those accepted within the Voluntary System of Accountability (2013)—namely the College Assessment of

Academic Proficiency (CAAP), the Collegiate Learning Assessment (CLA), and the Measure of Academic Proficiency and Progress (MAPP). The Critical Thinking Assessment Test (CAT), funded by National Science Foundation (NSF), is another good test for measuring skills associated with critical thinking, available through Tennessee Technological University. The National Survey of Student Engagement (NSSE) is not a direct measure of student learning, but it is a very useful indirect measure that can lead to further assessment of issues on campus.

It may be useful to think of standardized tests as a way to begin a discussion with faculty members about student achievement and the success of their programs in a comparative way and to then develop local assessments that are specific to the curriculum. Locally designed tests require a significant commitment of time in development and testing but may be preferred by some institutions and some faculty instead of standardized tests. In any case, accrediting agencies will want to know how these tests were used to improve the educational experience for students.

An embedded approach to assessing the major or general education usually involves the development of rubrics, selecting appropriate samples of student work to review, and training faculty to use the rubric. While this approach is significantly more time-consuming, it is typically more engaging for faculty.

Use of Information

The use of assessment information is central to the analysis made by accreditation reviewers of the acceptability of assessment practices. Suffice it to say here that institutions must demonstrate that assessment information collected is used to inform decisions. Whether this is at the course, program, or institutional level, the assessment information must be considered as an impetus for change. The changes might be fairly easy to implement, such as putting writing criteria online, or they might be extensive, such as changing the sequencing of courses or the revision of a general education curriculum. In any case, the institution must demonstrate that assessment information helps guide decisions. We describe this in more detail later in this chapter.

Other Issues

Scholars and assessment professionals must address numerous other issues in the course of their work on accreditation. Sampling is an issue for most institutions unless all students of a particular cohort are included in the assessment. Sampling can be an area of inquiry for accreditors. If the entire cohort of students is not involved in the assessment, accreditors want to know how the sample was selected and whether the process involved good sampling techniques.

Use of value-added assessment versus competency-based assessment has proponents and practitioners on both sides and, indeed, both are legitimate approaches to assessment. With value-added methods, institutions are asked what students “gain” as a result of their educational experiences in college; that is, comparing initial or baseline performance to performance at a

later time (often at exit). In contrast, competency-based assessment processes focus on demonstrating that students have attained a certain level of understanding, knowledge, skills, or values without a focus on gain scores. Some state agencies prescribe either value-added or competency-based assessment. For example, Virginia experimented with value-added assessment as a requirement, but it ultimately made this type of assessment optional in order to reduce dissonance between state requirements and those of the Southern Association of Colleges and Schools (DeFilippo, 2010). However, the issue of value-added is one that is typically resolved by the institution and is not part of state or accrediting agency standards or guidelines.

How the Assessment Process Is Best Managed

A central tenet of assessment is that it concerns the systematic application of information about student learning to improve teaching and learning, a task where faculty play the primary role. Departmental faculty members are the foremost actors in defining student learning outcomes, designing authentic tasks, and assessing student learning. In addition, as part of their organizational role, institutional researchers and assessment professionals support assessment processes through their knowledge of data collection and management, as data brokers and facilitators (McLaughlin & Howard, 2004), but less so as a method of deepening faculty knowledge of active learning and feedback processes—although it should be said that this latter function, too, often falls to the these practitioner. Given these varied roles for many, it is useful to differentiate *doing* assessment from *documenting* assessment, a distinction frequently articulated by Gloria Rogers (2007).

Centralized vs. Decentralized Systems

An important issue that institutions need to face is whether to decentralize or centralize data systems that house assessment data as well as other data related to student characteristics and success. There are advantages and disadvantages associated with both approaches. Centralization of assessment information and documentation processes often permits easier aggregation and summarization of data collected into management reports and overall summary reports for institutional decision makers, state-level authorities, and regional accreditors. Decentralization of assessment documentation processes, to at least a college or division level, permits the process to map more closely to expectations of specialized accreditors and to curricular norms within a discipline or related set of disciplines. When customized to a department or even degree program level, it can be easier for faculty to identify with and own assessment processes that map closely to their expectations, a deep cultural value that must be kept in mind. However, the staff required to provide support for customized assessment processes at the department level—and simultaneously retain information roll-up features to the college or university level—are not frequently found in colleges and universities, thus compromise solutions are frequently a necessity.

Organizational complexity is also a consideration in the decision to centralize or decentralize the management of assessment. It may be more practical for a community college to implement a uniform approach to assessment of student learning than it is for a large research institution. In a complex university, it may make more sense to assign assessment coordinators to specific colleges or disciplines (for example engineering, business, and education), to keep most assessment documentation within departments, and to require a more aggregated roll-up of information to the university level.

Assessment Management Systems

Requirements for documenting the assessment of student learning and common practices to demonstrate compliance have evolved significantly and have become increasingly complex over the past decade among accreditors. As a result, institutional practice has also evolved towards greater reliance on information technology (IT) solutions in the management of assessment data, reports, and processes. There are now many systems available that allow information to be organized according to the requirements of the accreditors. Currently available products may be traced to their developmental roots:

- Those originally developed by an institution in preparation for a regional or specialized accreditation study (for example OATS at Georgia Tech, WEAVE online at Virginia Commonwealth University, PRISM/PEARL at Colorado State University, and Mentor, now owned by Axiom Education).
- Those developed by companies who have responded to the need to prepare for specialized and regional accreditation requirements (for example TracDat, eLumen Achievement, LiveText, Xitracs, TaskStream, Waypoint Outcomes, Digication, and Tk20).
- Those developed by learning management system vendors in response to the need to aggregate information across courses in online programs (for example Blackboard's Learn Platform).

The practice of leveraging information technology for managing assessment processes and documentation has a number of key advantages. At its best, utilizing one or more web-based solutions for assessment management brings structure and cohesiveness to the process. That structure serves as a cross-campus communication and collaboration vehicle, and thus facilitates growth of evidence-based decision-making. For example, best practices in one department can more easily be translated to the context of another department through similar formatting and expectations for documentation. The use of IT solutions leverages everyone's effort to maximize results and drives down long-term costs by reducing lag time in communications, by eliminating double-data entry issues, and by enabling different parties across the campus to view information in either highly aggregated or very program-specific profiles. Finally, the use of IT solutions for managing assessment processes and documentation is a key to demonstrating compliance with

specialized accreditation criteria and institutional/educational effectiveness requirements of regional accreditation agencies.

While key advantages accrue to institutions with IT solutions for assessment documentation, there are also significant pitfalls. Adopting online systems for assessment data management forces decisions about data definitions, reporting, and change in the locus of control of information about student learning. Information that has been the sole provenance of individual faculty for hundreds of years frequently becomes shared within the department and recorded in assessment databases. Those involved in assessment should be aware of this major shift and be prepared to deal with resulting reactions. Further, it will pay large dividends to know the organizational culture and politics before introducing a systemic change—since we can never change just one thing in an organization without affecting other areas. The end goal is to develop both assessment processes and documentation systems that are easy to use, intuitive, responsive to user needs, and therefore more likely to be sustainable. Broad representation across campus is absolutely essential in developing or purchasing such systems to ensure buy-in by faculty and others who will be asked to use the system.

Common Expectations of Accreditors

What do evaluators want to see that demonstrates compliance with accreditation standards? That question is perhaps the most frequently asked at regional meetings of associations and in casual conversations among institutional representatives. The reason for this is that all accrediting standards are written in somewhat vague terms—using phrases like “acceptable” and “appropriate” to describe expectations. Official accrediting standards often must use these terms and avoid too much specificity since accrediting organizations serve within the higher education community a wide variety of institutional types with varying missions and roles. It should not be suggested, however, that accrediting agencies provide little guidance to institutions and evaluators regarding expectations for student learning. The websites of each of the regional accrediting agencies, most professional accrediting agencies, and many other professional organizations provide information in this regard. The information is updated as new requirements and emphases are made to accrediting standards, although not all supporting documents are updated as quickly as most institutions would prefer. Nonetheless, the use of broad terminology by accrediting agencies means that trust is placed in evaluators to exercise appropriate professional judgment to determine if an institution meets each standard. Since evaluators are chosen from peer institutions, their judgments should be based on similar expectations concerning what is appropriate or acceptable. Recognizing that even peer evaluators may have different expectations and perceptions regarding what constitutes compliance with standards, most regional and professional accrediting organizations make efforts to provide evaluators with orientation, training and other resources.

Evaluators of student learning assessment, regardless of type of institution, have certain general expectations. These expectations can be grouped into those having to do with the

assessment process and methodology and those having to do with institutional organization and culture of assessment.

Expectations Regarding Assessment Process and Methodology

In reviewing materials intended to document assessment of student learning, it appears that evaluators generally do not hold institutions to standards of "best practice." Best practice standards would require that institutions *always* employ assessment and analytical methods that assessment professionals have identified as leading to the most useful and valid information regarding student learning. We identified many of those practices earlier in this chapter and provided references and resources that institutions can access to help develop assessment methods. While all institutions may desire to achieve this level of performance regarding assessment, it is more realistic to expect that some of an institution's efforts in assessment may not reach that level. Below are general expectations regarding assessment process and methodology:

- *A focus on student learning outcomes, not the processes/resources underlying those outcomes.* In evaluating student learning, it is important that the outcomes identify specific student learning: knowledge, skills, behaviors, or values that students are expected to attain as a result of their educational experiences. Outcome statements such as "The department will provide the opportunity for students to develop writing skills appropriate to the discipline" focus on the opportunities, not the learning. To meet this outcome, all that would be necessary is for appropriate resources to be provided to students by the department. Rather than a focus on resources, evaluators will expect outcomes that focus on the students' learning; so, the outcome above should be restated: "Students will be able to demonstrate writing skills appropriate to the discipline." This outcome now requires assessment processes and results that are focused on actual student learning.
- *Assessment methods and results that directly map to outcomes*. While it may seem obvious, it is important that assessment methods actually provide information that is directly related to the outcome being assessed. Sometimes, this lack of congruence between expected outcomes and assessment method occurs because institutions do not clearly explain this relationship. At times, however, this relationship is conceptually difficult to grasp. For example, one national instrument, the Collegiate Learning Assessment (CLA), provides scores for performance tasks (using an integrated set of materials to answer open-ended questions) and analytic writing tasks ("make an argument" and "critique an argument" tasks). Often it is possible to tie CLA results to writing, problem-solving, or to critical thinking outcomes. It would be difficult, however, to link CLA results to an outcome asking students to demonstrate "knowledge" in

science. Yet, in our experience, such "links" are attempted by institutions and often rejected by evaluators.

- *Quality standards that result in reliable and useful information*. Certain practices have become standard and therefore expected by accreditation reviewers. These include faculty development of learning outcomes, student learning outcomes that are concerned with important learning rather than peripheral or even trivial matters, faculty experts as the judges of student work, rubrics for assessing nearly all types of student work and validation of these judgments by faculty other than the instructor of record, student work from the end-of-program student experiences, reasonable samples of student work, and so forth.
- *Use of assessment results to make improvements.* It is clear that the expectations of accrediting organizations go beyond simply the "doing" of assessment; most explicitly call for institutions to demonstrate that assessment results are used to make improvements. However, two related questions can be asked. Must an institution demonstrate that students improve their learning or meet an acceptable standard? Can an institution simply demonstrate that it is improving its assessment *efforts* without demonstrating improved learning or competence?

A number of accrediting organizations explicitly note that assessment is an important component for improvement of student learning. For example, the 2011 *Standards of Accreditation* of the Commission on Institutions of Higher Education, New England Association of Schools and Colleges states that

> The institution implements and provides support for systematic and broad-based assessment of what and how students are learning through their academic program and experiences outside the classroom. Assessment is based on clear statements of what students are expected to gain, achieve, demonstrate, or know by the time they complete their academic program. Assessment provides useful information that helps the institution to improve the experiences provided for students, as well as to assure that the level of student achievement is appropriate for the degree awarded. (2011, p. 11)

Realizing the practicalities of assessment program implementation, many evaluators would not require that an institution demonstrate that student learning has improved for all programs being assessed. Some programs may be involved in long-term assessment efforts yet much of the improvements being made are to process, methodology, and analysis. If all, or most, programs are at this "early" stage of developing assessment programs, evaluators may recommend that actual demonstration of student learning be provided before they judge an institution to be in compliance with their organization's standards.

Expectations Regarding Institutional Organization and Culture of Assessment

Accrediting organizations not only state expectations regarding the assessment process but also at times describe institutional context and organizational aspects that would lead to better assessment practices. These factors serve to inform the evaluator regarding the institution's commitment to effective student learning assessment and the extent to which the assessment efforts are seriously undertaken by those who should be most involved—the faculty and staff providing instruction and other educational experiences.

- *An organization and culture—with formal structures and/or informal practices—that support and enhance student learning assessment and the use of results.* Institutions should have evidence that assessment of student learning is being managed appropriately through organizational structures. This can be accomplished in many different ways. Permanent (preferably not "ad hoc") committees can be set up to regularly monitor assessment at the institutional and/or departmental levels. For student learning assessment, faculty (and in some cases, staff—for example, Student Affairs areas) must be involved in setting expectations, evaluating results, and using the results to improve student learning though improved programs, curriculum, and instruction.
- *A history of assessment activities that indicates an institutional commitment to the process.* Evaluators are often asked, "How many years or cycles of assessment are required for us to be in compliance?" While individual evaluators may have their own standards to determine the answer to this question, accrediting standards do not usually provide that kind of specificity. Clearly, in order to show that the assessment process is functioning, at least one "cycle" of assessment needs to be completed and assessment results must be used to make improvements, though multiple cycles are preferable.
- *Embedding of assessment in other organizational processes*. Institutions must also show how their assessment processes fit in with other key institutional processes, including strategic and operational planning at the institutional level, and increasingly with academic program review processes. Similarly, for example, many evaluators will look to see how assessment results are considered in planning and budget allocation.

It should also be pointed out that, while not required for successful accreditation efforts, many evaluators will also look for evidence that institutional leadership understands the importance of student learning assessment and is committed to its implementation and use to meet the institution's mission and to demonstrate student success. This support from higher level administrators provides contextual information that evaluators use in making their judgments and is certainly a benefit to all institutions engaged in assessment efforts.

Unique Expectations Regarding Assessment of Student Learning

All regional accreditation bodies in the United States have published expectations regarding the ongoing, systematic assessment of student learning at the program and institution level. However, in several cases, the expectations can go beyond requirements for assessment processes that demonstrably result in enhancements at the program level. A number of the regional accreditation agencies have also embraced a thematic, institution-wide basis for assessment of student learning in line with cross-discipline and/or cross-functional educational projects or interventions undertaken. In this section we explore those thematic or project-based assessment and evaluation requirements of regional accreditation bodies and the attendant implications of those requirements for faculty and staff members.

Southern Association of Colleges and Schools, Commission on Colleges—QEP

The adoption in 2003 of the *Principles of Accreditation* brought a new dimension to regional accreditation in the South and advancement in regional accreditation processes nationwide. In addition to assuring compliance with the other *Principles of Accreditation*, a core requirement and associated comprehensive standard now exist for developing and implementing a Quality Enhancement Plan (QEP) as a key element of the reaffirmation of accreditation. The QEP is conceived of as a prospective, longitudinal (five years) improvement project undertaken by the institution. The project may map to the institution's planning process, stem from issues arising out of prior assessment activities, and have as its purpose the improvement of some aspect of student learning of high importance to the institution. Taking the next step towards specific theme-based program evaluation and assessment, the SACS Commission on Colleges has codified those elements of organization that most likely lead to QEP success in its *2012 Quality Enhancement Plan Guidelines*. The specification of clear, measurable student learning outcomes, rigorous design for measurement of learning in the proposed QEP, organization of a data collection process, and sustainability of the intervention are essential on that list of elements.

Higher Learning Commission of the North Central Association

Similar to the thematic focus of the SACS Quality Enhancement Plan, the Higher Learning Commission of the North Central Association has recently approved Open Pathway, an accreditation model that includes a major Quality Initiative that takes place within years five and nine of the accreditation cycle. The commission has limited participation in this model to institutions in good standing. While not specifically required, one of the suggested topic areas for a Quality Initiative is for the institution to undertakes a multi-year assessment process focusing on "systemic, comprehensive assessment and improvement of student learning" (Higher Learning Commission, 2013, p. 11). To enable an evaluation of Quality Initiative proposals, proposals must be anchored in the institution's expected outcomes for the project. Accountability for follow-through is established through the requirement for a Quality Initiative Report that is evaluated by peer reviewers.

Western Association of Schools and Colleges, Senior College and University Commission (WASC–Senior)

WASC–Senior has recently gone through a revision of both its accreditation standards and its process for reaffirmation of accreditation, both of which feature a strong emphasis on the assessment of student learning, academic program review, and continuous evidence-based quality improvement as central foci of institutional quality enhancement processes. Under the WASC 2013 *Handbook of Accreditation*, the required Institutional Report may include one or more institution-specific themes that the institution has identified and wishes to further pursue. The inclusion of institutional themes in the report is intended as "an opportunity for institutions to align their own priorities with WASC's quality improvement processes" (2013, p. 32). In terms of outcomes evaluation, the *Handbook* suggests that institutions provide clear statements of their goals and/or outcomes in pursuing a theme, as well as metrics, a timeline, evidence for progress, and required resources.

Middle States Commission on Higher Education (MSCHE)

The 2012 Middle States Commission handbook on *Self Study: Creating a Useful Process and Report* (pp. 22-30) describes a number of alternate self-study models, including a "Selected Topics" model. Under the model, institutions devote focused attention to a single topic and the visiting team concentrates solely on that topic. The *Handbook* specifically cites a Planning and Assessment Selected Topics Self-Study, noting that "A selected topics approach that might work especially well for many institutions is to select Standards 2 (Planning, Resource Allocation, and Institutional Renewal), 3 (Institutional Resources), 7 (Institutional Assessment), and 14 (Assessment of Student Learning). These standards are interrelated and are major areas of emphasis within "Characteristics of Excellence" (p. 27). The review of compliance with other accreditation standards is addressed separately, allowing the visiting team to concentrate its review on the selected topic. According to Dr. Linda Suskie, MSCHE vice president emerita (email communication, April 22, 2010), assessment is the "#1 topic addressed" in self-studies with the selected topics focus.

Commission on Institutions of Higher Education, New England Association of Schools and Colleges

Akin to the alternative approach to accreditation offered by the Middle States Commission, the Commission on Institutions of Higher Education (CIHE) of the New England Association of Schools and Colleges provides two thematic self-study alternatives, the traditional format with variations and the self-study with areas of emphasis (*Self Study Guide*, 2011, pp. 19-21). In the latter model, the "Self-Study with Areas of Emphasis is expected to yield greater analytical depth and breadth across the institution" (p. 20). The commission further requires that the academic

program or a significant aspect of it must be one of the areas of emphasis; however, no explicit expectations for assessing student learning other than the CIHE standards are articulated within the alternative approaches presented.

Northwest Commission on Colleges and Universities

An approach to regional accreditation standards and processes that goes further than most other regions outside of SACS in adopting a thematic basis is found in the revised standards (2010) of the Northwest Commission on Colleges and Universities (NWCCU). These standards require institutions to identify mission-driven "core themes" and to use those themes as foci for their accreditation and assessment efforts, as well as demonstrating adherence to all the standards. Specifically under criteria 1B1 and 1B2, the institution "identifies core themes that individually manifest essential elements of its mission and collectively encompass its mission," and "establishes objectives for each of its core themes." The institution must also "identifies meaningful, assessable, and verifiable indicators of achievement that form the basis for evaluating accomplishment of the objectives of its core themes" (2010, p. 2).

Collecting relevant data and assessing progress on the core themes first requires disaggregation to the level of the organizational elements and educational programs that bring that theme together. This is followed by roll-up analysis to the institution. The NWCCU requires institutions to follow up on their core themes in the reporting for year one, year three, and year seven of the seven-year accreditation cycle.

Bridging from Assessment of Student Learning to Student Success

Bridging from assessment for accreditation to student success presents many challenges and opportunities to researchers, assessment professionals, and faculty in higher education. At the beginning of this chapter we asserted that assessment associated with accreditation activities ultimately plays an important role in understanding student success. The rationale for this position is that if the work of faculty and staff professionals in higher education institutions is focused on improvement of programs through assessment, resulting program improvement will ultimately improve student learning. Improved student learning—while a success in itself—can also lead to other types of student success, including the improvement of retention and graduation. In order for this to happen, much is asked of faculty and staff at our institutions.

Various offices on campuses must facilitate the institutional assessment documentation processes required to comply with accreditation standards. Often, this is a functional office within the institution's administration such as the Institutional Research Office, Assessment Office, and/or and Institutional Effectiveness office. The challenges associated with this facilitation take many forms. For example, the current and proposed requirements of regional accreditors concerning theme-based accreditation processes have at least five potential areas of impact on the work of campus offices: additional workload, increased expectations for

methodological sophistication, responsibilities as data stewards rather than as simply data brokers, long-term project management, and increased budgetary needs.

In the absence of another centralized locus for facilitating projects where institutional and student learning data are involved, the net effect of thematic accreditation requirements is to add new workload dimension on support offices. The nexus of institution-wide theme-based projects will almost certainly fall tangentially if not directly on these offices. Theme-based accreditation studies also add to the expectations for expertise in research design and methods. For example, the assessment of the SACS Quality Enhancement Plan (QEP) may or may not overlap with other assessment processes in use at an institution but should be sufficiently triangulated (i.e., viewed from multiple perspectives) such that reasonably accurate information about the effect of the QEP on student learning may be ascertained. Since the implementation of the QEP as proposed by the institution is intended to be of at least five years in duration, its assessment becomes much more akin to a longitudinal program evaluation. Almost inevitably, this will necessitate a multiple methods evaluation, combining assessment and institutional data to track progress on both programmatic goals and student learning outcomes. Institutional research and assessment offices, with proven expertise in data management, can be called upon to serve as data stewards for assessment data developed through a theme-based accreditation project. A budget for instrument purchase and/or development; staff and staff time for data collection, cleaning and analysis; and report writing standards and procedures should be built into the theme-based assessment proposal. Hard costs are involved in procuring suitable assessment instruments, but just as importantly, regional accreditors have clear expectations that a theme-based accreditation project will have sufficient resources assigned to it, including a budget for evaluation costs.

While the challenges associated with assessment are undeniable, the opportunities to support student success are compelling. First, initiatives that focus on student success are likely to raise the standards for research and assessment of student learning. For example, the silver lining inherent in thematic assessment is that its future-focused orientation demands projects of significance where numerous organizational constituencies are collectively engaged in creating a better learning environment for students. In this respect, the trend is likely to validate the work of research and assessment staff members and to result in a higher and more public profile for those functional areas or offices.

Second, bridging to focus on student success is likely to engage institutional leaders. These leaders need to play a key role in assessment efforts if they are to have a positive effect on student success. Without the active, vocal support of campus leaders—presidents, deans, department chairs, and others—assessment efforts on campus may be unsuccessful. Senior administrators also play a key role in providing the incentives for faculty members to become engaged in the assessment process in a positive way.

Third, and perhaps even most important, is the opportunity for active involvement of faculty members in the accreditation assessment process and discussions of student success. Faculty members, faced with traditional and important responsibilities for teaching, research, and

service may not initially see assessment activities as relevant to their jobs or see their role in discussions on topics beyond student learning itself. The focus on teaching alone does not always include a focus on student success—unless that is simply an examination of grade distributions. Assessment of student learning done simply for institutional compliance with accreditation requirements is not the most effective way to either motivate faculty members to engage in discussions around improving student success. If done correctly, however, assessment activities can refocus faculty members on the overall effects of their program on student learning and can also energize them to make important changes to curriculum and instruction to improve student success—something that all faculty members are motivated to achieve.

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Linking the Assessment of Student Engagement to Student Success

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Public anxieties about the quality of U.S. higher education have stimulated considerable pressure for assessment and accountability, especially in the media and from state and federal governments. In response, thoughtful policy makers and scholars have recommended many ways for higher education to improve its operations, including curricular reform, faculty development, resource reallocation, and improved assessment (Wingspread Group on Higher Education, 1993; Barr & Tagg, 1995; Gaston, 2010). Even so, critics continue to argue that U.S. higher education as a whole has no consistent means to gauge how well students are learning and thus no adequate way of knowing how to improve student learning (Measuring Up, 2006; Commission on the Future of Higher Education, 2006).

In reality, U.S. higher education has reached a level of transparency not observed during past decades, due in part to efforts to respond more effectively to critics and policy makers and to creation of efficiencies in the management of colleges and universities. Such efficiencies include, but are not limited to, the development and use of appropriate software, the use of the internet as a communication path, and the use of metrics that better document factors leading to student success. Such efforts have revealed the need to collect and use both direct (e.g., graduation rates) and indirect (e.g., student satisfaction) measures to better understand and define student learning and success. The focus of this chapter is on the use of a specific indirect measure that is enhancing the ability of colleges and universities to understand why students may or may not succeed. This measure is designed to collect data on student engagement.

Indirect measures of learning are sources of evidence which can serve as reliable indicators of learning outcomes; however, they do not directly measure learning outcomes. One such indirect measure, student engagement, has been linked to numerous desirable measures of student success, including persistence, grades, and other important successful learning outcomes. For this reason, student engagement has recently come to prominence as a viable alternative for institutional assessment, accountability, and improvement efforts (Kuh, 2003; 2009). In this chapter, we explore the conceptual foundations and measurement of student engagement, and

share studies which link student engagement to student success. We also provide examples from several institutions that use student engagement in formative assessment to improve their students' learning experiences. Finally, we look at the researcher's role in effectively using engagement data to create a culture of evidence that documents student success.

Foundations of Student Engagement

Historians will surely write about the 1990s and 2000s as a period of reform in US post-secondary education. During this time, colleges and universities started taking responsibility for one factor believed to really matter to student success and intentionally fostered educationally purposeful activities for students. Indeed, this period witnessed the creation and widespread adoption of several large survey projects with alphabet-soup acronyms like NSSE, CCSSE, YFCY, CSS, SERU, and UCUES[1] – all of which capture important aspects of students' educational experiences.

Student engagement—the amount and quality of time and energy students devote to their learning—draws from many sources but, most notably, Pace's (1980) notion of quality of effort, Astin's (1984) theory of student involvement, and Chickering and Gamson's (1987) principles for good practice in undergraduate education. Pace (1979) was convinced that to truly assess institutional quality one needs to measure both the amount of time students spend in learning activities and the quality of their efforts within those activities:

> All learning and development requires an investment of time and effort by the student. What students can gain from the variety of events depends on the amount, scope, and quality of their engagement. As these encounters broaden and deepen, the student's capacity for growth is enhanced. To document objectively the scope and quality of students' effort is crucial for understanding growth and development. (p. 127)

In his theory of student involvement, Astin (1984; 1993) also posits that success in college comes from a greater investment in the college experience, emphasizing behaviors over attitudes. His theory postulates that involvement in learning requires an investment of psychological and physical energy on the part of the student and that student learning and development is directly proportional to the quantity and quality of their involvements. Both Astin and Pace (and now NSSE) emphasize that educationally effective colleges and universities must create classroom and campus environments that induce better participation in learning activities.

Chickering and Gamson's (1987) article "Seven Principles for Good Practice in Undergraduate Education" serves as a foundation for a more recent initiative on student involvement—student engagement (Kuh, 2009). The student-centered principles encourage

[1] NSSE: National Survey of Student Engagement; CCSSE: Community College Survey of Student Engagement; YFCY: Your First College Year; CSS: College Senior Survey; SERU: Student Experience in the Research University; UCUES: University of California Undergraduate Experience Survey.

institutions to create campus climates, programs, services, and classroom experiences that foster: (a) meaningful and enriching interactions between students and faculty, (b) cooperation among students in their learning, (c) opportunities for active learning, (d) prompt feedback on students' work so that they can maximize the educational impact, (e) rigorous and relevant academic work that motivate students to spend more time on task, (f) an environment that conveys and supports high expectations for each student, and (g) a desire to draw from diverse talents and ways of learning. Implementation of the principles requires that perspectives on the educational process and measurement of student success be broadened to include less traditional outcome measures.

Until recently, most assessments of institutional quality focused on products such as grades, graduation rates, job placements, persistence, and so on. While these represent legitimate forms of student success, they often lack information that is needed for institutional improvement. Whether students are highly successful or performing poorly, colleges and universities need to know which types of programs, activities, teaching methods and so on produce those outcomes and which are ineffective (Banta, 2002).

Today, measures of engagement are an increasingly common source of evidence of student learning and, therefore, institutional quality (Kuh, 2001; 2003; National Survey of Student Engagement, 2010a; McPherson & Shulenburger, 2006). Knowing that the institution has a substantial degree of influence over students' learning behaviors, perceptions, and environments (Pascarella & Terenzini, 2005), student engagement data provide valuable diagnostic information that informs institutions in efforts to consider how and where to exert their substantial influence. For this reason, assessments of student engagement are said to provide actionable information for the institution (Kuh, 2009).

Measuring Student Engagement

As mentioned, several good surveys of student engagement are available in the US, and many more are written and administered locally for use on individual campuses. For example, now in its fourth decade, the College Student Experiences Questionnaire (CSEQ), created by Pace in the 1970s to measure quality of effort, is currently administered by the Center for Postsecondary Research at Indiana University. The CSEQ is a comprehensive inventory of college activities such as use of the library, experiences with faculty, course learning activities, writing experiences, involvements in the arts, and diverse interactions. Each activity scale is computed from as many as eleven individual questions which are arranged in Guttman-like format from relatively simple activities (such as studying in the library, or using a dictionary) to more challenging activities (such as evaluating the quality of information obtained from the library, or writing a lengthy research paper). In this way, each activity on the CSEQ is measured in two dimensions: (a) a *quantity* of effort dimension as measured by how often the student reports doing the activity, and (b) a *quality* of effort dimension as measured by participating in the more challenging activities within each scale (Pace, 1980). Should the Center for Postsecondary

Research at Indiana University discontinue the CSEQ in its current form, the survey will remain available for use and adaptation by permission.

The Higher Education Research Institute (HERI), located at the University of California at Los Angeles, administers the Your First College Year survey (YFCY) and the College Senior Survey (CSS). Both surveys are based on Astin's theory of student involvement. YFCY helps institutions examine the quality of first-year programs that are designed to promote involvement, satisfaction, retention and success, and, in turn, to enhance retention strategies at participating campuses. The CSS examines self-reported and perceived outcomes in academic, civic, and diversity areas while examining related college experiences.

A number of surveys are designed for specific types of universities. For example, the Center for Studies in Higher Education at the University of California at Berkeley administers the Student Experience in the Research University (SERU) survey and The University of California Undergraduate Experiences Survey. These surveys focus on engagement at large, research intensive universities and focus on student experiences within the specified type of setting.

While all are worthwhile, discussion of all instruments identified above is beyond the scope of this chapter. The remainder of the chapter thus pays particular attention to the description, research, and institutional use of the National Survey of Student Engagement (NSSE) and the Community College Survey of Student Engagement (CCSSE). These surveys are two of the more prominent tools currently used to assess engagement in higher education.

Surveys of Student Engagement

In 1998, a team of assessment experts met to craft a strategy for addressing the challenge of coming up with a better way to assess institutional quality. Their goal was to identify a method that could serve as a scholarly and defensible counterweight to the popular but controversial institutional rankings that are published each year. The result was development of the National Survey of Student Engagement, commonly referred to as NSSE. The survey was designed to provide invaluable diagnostic information to institutions for to support improvement efforts (Kuh, 2001). Many of the items included on the NSSE instrument were adapted from the CSEQ, with a few others from the HERI surveys and student and alumni surveys administered by the University of North Carolina system.

The NSSE collects information from first-year and senior students about participation in a variety of educationally purposeful activities such as collaborating with peers on projects or assignments, interacting with faculty members, or higher-order tasks such as analyzing, synthesizing, evaluating, or applying course ideas to practical situations. The survey also gathers data on participation in high-impact activities such as service learning, study abroad, learning communities, or research with a faculty member. It asks students to rate their campus environment in terms of support for their academic and nonacademic needs. Students also answer questions that estimate the amount of progress made in key areas of learning such as

analytical thinking, understanding people of other racial and ethnic backgrounds, and acquiring vocational knowledge and skills. In 2013, NSSE launched a new version of the questionnaire with updated language to be more appropriate for diverse types of courses (e.g., traditional classrooms versus online or distance education) and additional content areas such as quantitative reasoning and exposure to effective teaching practices.

Prior to 2013, NSSE grouped 41 of the survey questions into five benchmarks of effective educational practice: (a) level of academic challenge, (b) active and collaborative learning, (c) student-faculty interaction, (d) enriching educational experiences, and (e) supportive campus environment—content areas that overlap with Chickering and Gamson's (1987) seven principles. The concept of student engagement was also rooted in the concept of deep learning which emphasizes active, learner-centered environments and which is evident when students genuinely commit to understanding the material by engaging in strategies such as drawing ideas from multiple sources (including the learner's experience), talking about the material with others, breaking down concepts into their basic parts, synthesizing information into more complex wholes, self-reflection and other-centeredness creating new perspectives (Nelson Laird, Shoup, & Kuh, 2005).

With the 2013 launch of the updated NSSE instrument, 47 survey items are now grouped into ten Engagement Indicators (EIs): Higher-Order Learning, Reflective and Integrative Learning, Learning Strategies, Quantitative Reasoning, Collaborative Learning, Discussions with Diverse Others, Student-Faculty Interaction, Effective Teaching Practices, Quality of Interactions, and Supportive Environment. The content of the previous version of NSSE, including the benchmarks of effective educational practice and deep approaches to learning, continues to be represented by the new version of NSSE. Sets of new, updated, and continuing survey items, however, are regrouped into these more focused, actionable aggregate measures.

The Community College Survey of Student Engagement (CCSSE) was adapted from NSSE in 2002 to address differences in student populations, institutional governances, and campus cultures unique to that sector of U.S. higher education. For example, CCSSE includes questions about technical education and remedial coursework that are pertinent to community college students (Community College Survey of Student Engagement, 2010a, 2010b). CCSSE uses five groupings of items similar to the NSSE benchmarks of effective educational practice which measure level of academic challenge, active and collaborative learning, student-faculty interaction, student effort, and support for learners.

Validity and Reliability of Student Engagement Data

Colleges and universities frequently administer surveys that collect self-reported data from respondents. These types of surveys must contain questions that are clearly written and have appropriate response options. Student engagement instruments are no different. As with other instruments, engagement data must be shown to be valid and reliable.

Because of their widespread use, NSSE and CCSSE are able to test for validity among a broad population of students. In general, student self-reports are valid when they meet the following five criteria (Gonyea, 2005; Gonyea, Kish, Kuh, Muthiah, & Thomas, 2003, p. 24):

1. Respondents should be able and willing to provide accurate information.
2. Questions should be about recent behavior.
3. Questions should not explore sensitive, potentially embarrassing areas.
4. Questions should be phrased clearly and unambiguously.
5. Respondents should take the questions seriously and thoughtfully.

Results from focus group and cognitive interview testing on the NSSE questionnaire support the presence of these conditions (Kuh, 2004; Ouimet, Bunnage, Carini, Kuh, & Kennedy, 2004). Additionally, Kuh et al. (2006) found that that majority of the NSSE items are interpreted consistently by students from different racial or ethnic backgrounds and at different types of institutions. The 2013 revision of NSSE was extensively tested for clarity through two years of survey pilot testing and psychometric analyses as well as through numerous focus group and cognitive interviews (BrckaLorenz, Gonyea, & Miller, 2012).

The NSSE survey was designed with consequential validity in mind—so that data would be actionable and useful in decision making (McCormick & McClenney, 2012). Many studies of the validity of engagement data, however, include analysis of the relationship between items with reasonable content overlap. For example, the number of hours students spent preparing for class is positively related to the number of course readings and written papers, and to how challenging they perceive their course examinations (Kuh, 2004). Students living on campus are involved in more campus activities than students living off campus, and those majoring in science fields spend more time on science laboratory activities than students majoring in arts and humanities fields. Other positive relationships were found between scientific and quantitative experiences and self-reported gains in science and technology. Additional information about validity evidence for the NSSE benchmarks can be found in the Psychometric Portfolio on the NSSE Web site. At the time of writing this document, psychometric analyses of the 2013 Engagement Indicators (EIs) were in progress. EIs were constructed through exploratory factor analysis with preliminary factor loadings ranging from .55 to .91 for first-year students and .58 to .92 for seniors. Additional evidence of validity will be gathered with the use of confirmatory factor analysis (construct validity), identification of differences in engagement by various student types (known-groups validity), and by examining correlations between measures with known relationships (concurrent validity).

Construct validity and measurement invariance between subgroups has also been tested in a series of studies using CCSSE data. Construct validity was measured by examining the relationship between student-reported GPA and the fourteen CCSSE constructs. Hierarchical linear models revealed a significant positive relationship between grades and the CCSSE constructs of engagement. Tests of measurement invariance in confirmatory factor analyses showed that there were no differences in measurement by gender, by enrollment status, or by year of participation in the study (Marti, 2006).

Reliability of student's self-reports of engagement data are supported by studies of temporal stability, discrimination, and internal consistency. Temporal stability includes the consistency of institution-level scores from year to year. Correlations of aggregate benchmark scores between years ranged from 0.74 to 0.93 (Kuh, 2004), suggesting that institution-level benchmarks are relatively stable over time. At the student-level, test-retest correlations for students that complete NSSE more than once in a given administration range between 0.74 and 0.78 (Kuh, 2004).

Another way to estimate reliability of NSSE results is to test for internal consistency by calculating Cronbach's alpha for the benchmarks and other scales. Internal consistency of a set of items indicates how well the items measure the same variable or construct. Internal consistency for the NSSE benchmarks ranged from 0.59 to 0.80, where level of academic challenge and supportive campus environment have the strongest reliability coefficients. Still, only three of the five NSSE benchmarks for each class have an internal consistency coefficient of 0.70 or greater. This result is not surprising given that the benchmarks were created more for the purpose of communicating clusters of items rather than for presenting them strictly as a construct with rigorous scale properties. Starting with the 2013 instrument, the NSSE Engagement Indicators—created with more psychometric rigor—have improved internal consistency, with coefficients that ranged from .76 to .89 for first-year students and from .75 to .89 for seniors.

Finally, the internal consistency for 14 constructs measured on the CCSSE range from .56 to .83. Student-level test-retest reliability was analyzed by comparing the scores of students that took the survey more than once in the same administration year. Reliabilities from this analysis range from .61 to .77. Ten of these 14 constructs have student-level test-retest reliability scores higher than .70 (Marti, 2006).

Connecting Student Engagement to Student Success

Studies linking student engagement to student success reveal the strength of relationships between the various forms and expressions of engagement. Research studies reveal an array of possible outcomes such as improvement in a student's GPA, job placement, moral development, and quantitative literacy. The following outcomes are discussed in more detail below: grades, critical thinking, GRE test scores, persistence, and other successful outcomes.

Student Engagement and Grades

Engagement in activities such as challenging intellectual and creative work, interacting with faculty members, and participating in active and collaborative learning activities have been shown to be positively related to student success as measured by GPA (Kuh, 2004; Kuh, Cruce, Shoup, Kinzie, & Gonyea, 2007; Carini, Kuh, & Klein, 2006; National Survey of Student Engagement, 2002). This relationship is even stronger for lower ability students and minority students (Kuh, 2008; Kuh, Cruce, Shoup, Kinzie, & Gonyea, 2007). This finding is important in that engagement appears to have compensatory effects on students who historically have had fewer opportunities for educational success.

Similar results have been found at two-year institutions; successful outcomes for students appear to be related to student engagement (McClenny & Marti, 2006). Research results reveal that measures of student-faculty interaction, active and collaborative learning, student effort, and academic challenge are all strongly related to the cumulative GPA of students at community colleges. Similar results are found for other measures of student engagement. For example, exposure to diversity, academic preparation, and perceived gains in academics are related to successful community college student outcomes such as GPA.

Student Engagement and Critical Thinking

Research has linked engagement to measures of critical thinking (Carini, Kuh, & Klein, 2006). Critical thinking is most strongly related to academic challenge, reading and writing, and institutional emphases on good practices such as providing academic support and emphasizing contact among students with different backgrounds. First-year students have the strongest relationship between critical thinking and specific activities such as writing short papers and coming to class prepared. The strongest relationships for seniors are for activities such as integrating ideas from different courses to complete assignments and receiving prompt feedback from faculty members.

Student Engagement and GRE Test Scores

Research results reveal that students' GRE scores are strongly related to students' engagement in reading and writing activities. Compensatory effects are evident where the lowest ability students appear to benefit the most from engagement activities such as higher-order thinking, reading and writing, and integrating diversity into coursework—particularly with respect to critical thinking and GRE scores (Carini, Kuh, & Klein, 2006). Significant relationships are also evident between critical thinking and engagement in both active and collaborative learning activities as well as participation in enriching educational experiences such as exposure to diversity, or being part of a learning community (Pascarella, Seifert, & Blaich, 2010).

Student Engagement and Persistence

Student engagement activities are often linked with persistence toward educational goals. Research results confirm this observation. Engaging in high-impact activities and cocurricular activities increases a first-year student's probability of returning for a second year, particularly for African American students (Kuh, Cruce, Shoup, Kinzie, & Gonyea, 2007; Kuh, 2008). Research results also indicate that students who withdraw from their institution have lower levels of engagement than those who finish a second year at their institution (Hughes & Pace, 2003). For example, Hughes and Pace (2003) found that, relative to students who persisted, a much larger percentage of students who withdrew had never made a class presentation or worked with classmates on class assignments. Similarly, at two-year institutions, measures of active and collaborative learning, student effort, supportive campus environment, academic challenge, and student-faculty interaction are all positively related to persistence to a second year of college and to community college students' completion of their degree or certificate (McClenney & Marti, 2006).

Student Engagement and Other Successful Outcomes

Research shows positive connections between student engagement and a variety of other indicators of student success. For example, research results reveal that participation in enriching educational experiences is related to measures of moral character. Similarly, participation in academically challenging work is related to positive attitudes toward literacy-oriented activities. Measures of intercultural effectiveness are related to active and collaborative learning activities, participation in enriching educational experiences, and student reports of a supportive campus environment. Student reports of campus support are also found to be related to measures of psychological well-being (Pascarella, Seifert, & Blaich, 2010).

Putting Student Engagement Data to Use

Thus far we have touched on the measures of student engagement, but a full assessment cycle requires that valuable diagnostic information be put to use for institutional improvements that lead to student success. Thus, it is essential that student engagement results be examined, shared widely, and put to valid use on the campus (Kinzie and Pennipede, 2009). Bers and Seybert (1999) wrote, "Probably the most frustrating aspect of research is seeing work go unused" (p. 4). In this section, we provide several institutional examples of using engagement data to increase student success. These are organized around the four primary purposes for collecting such data: (a) accreditation, (b) accountability, (c) strategic planning, and (d) program assessment (Banta, Pike, & Hansen, 2009). (Additional examples of NSSE use may be retrieved from the online search tool: http://nsse.iub.edu/html/using_nsse_db.cfm)

Using Student Engagement Data in Accreditation

In 2008, Morgan State University (MSU) was reaccredited by the Middle States Commission on Higher Education (MSCHE). For their self-study, MSU used NSSE results and focus groups to support MSCHE Standard 9 (Student Support Services). Faculty, administrators, and students participated in "Opportunities for Continuous Improvement in Academics," a series of focus groups to improve the level of customer service at MSU. For MSCHE Standard 14 (Assessment of Student Learning), MSU used NSSE and FSSE results as evidence of a successful assessment plan. These instruments provide information about student engagement at the institution from both student and faculty perspectives. MSU focused on specific successful outcomes, such as written and oral communication skills, acquiring a broad general education, and participating in community-based projects. As a result of a strong general education program, MSU reported improvements in the written and oral communication skills of undergraduate students.

California State University, Monterey Bay (CSUMB), in existence for only six years before undergoing its first Western Association of Schools and Colleges (WASC) accreditation review, also used results from NSSE to inform strategic planning and program review. Drawing on two years of NSSE data, results were presented as evidence for several WASC standards, to include Standard 2.5 (Teaching and Learning). NSSE items that focused on active class participation and prompt feedback were used to show that academic programs at CSUMB involve students in the learning process and provide students with continuous feedback on their learning and academic performance. NSSE data were also used, along with results from an alumni survey, to show the impact the institution's core values had on students and that students felt well-prepared in regards to personal and professional development.

Using Student Engagement Data for Accountability

The Voluntary System of Accountability (VSA) (McPherson & Shulenburger, 2006), a public Web site that hosts assessment data from institutions, endorses the inclusion of engagement data in their college portraits. Youngstown State University (YSU) analyzed NSSE data as part of its participation in the VSA project. Active and collaborative learning experiences and student-faculty interactions were of particular interest. Along with NSSE data, faculty review information about student learning using electronic portfolios and classroom assignments and look at these results in relation to academic performance. YSU uses this process to not only improve student success at the institution but to inform decisions about the use of appropriate assessment tools.

Clemson University also uses NSSE data for accountability purposes. The South Carolina State Budget and Control Board requires that all colleges and universities apply the Baldrige Criteria for Performance Excellence, a common language for documenting evidence of institutional performance (National Institute of Standards and Technology, 2009). National criteria for educational quality are used by the state board and adapted to address specific guidelines of the Baldrige Criteria. Each college and university must benchmark its performance against these criteria in their accountability report to the state board. To do this, Clemson uses various sources of institutional data, including NSSE data.

Student Engagement Data and Strategic Planning

Kennesaw State University (KSU) relies on engagement data to meet the goals of its 2007-2012 Quality Enhancement Plan (QEP), "Global Learning for Engaged Citizenship." This five-year plan positions global learning as a key outcome of undergraduate education at KSU. The QEP consists of ten goals, each with action plans and assessment strategies to ensure institutional effectiveness in providing global learning opportunities and promoting engaged citizenship. NSSE data are used to explore relevant areas, such as study abroad, foreign language, and exposure to diverse perspectives.

The Student Affairs division at Bellarmine University uses student engagement results in its strategic planning efforts. Student perceptions of the campus environment are of particular interest, as improvement in this area is an important goal of the division and institution. To better achieve this goal, Bellarmine uses NSSE data to develop a cocurricular transcript initiative and increase assessment efforts within the student affairs division. Improvement on NSSE benchmark scores are also an important goal at California State University-Dominguez Hills, where active and collaborative learning is used to create a model for student success at the institution.

Using Student Engagement Data for Program Assessment

At Western Kentucky University, NSSE benchmark results are broken down and disseminated to various departments; bar graphs compare department scores with the rest of the university. The goal is for departments to explore their overall impact on student engagement activities and the level of academic challenge they provide. Similar efforts are used by the University of Central Missouri where programs are assessed in several key areas, including engagement. Each department's progress in improving its efforts is assessed annually by deans and the provost.

In an effort to improve the quality of students' interactions with faculty, George Mason University funded social gatherings where students and faculty could interact. The psychology department responded, planning an afternoon social in the hallway of an academic building. Data were collected by institutional researchers who attended the event and conducted brief interviews. Analysis of the data revealed that participating students reported improving their relationships with faculty and benefitting from the interactions.

Data Management in Documenting Student Success

The examples in the previous section are helpful in understanding how colleges and universities can use engagement data to improve student success. Campus functions that are responsible for the overall collection and management of the engagement data may differ among the colleges and universities. Nevertheless, we propose three roles for consideration by researchers assigned to manage and use the data: (a) understand the data, including limitations, (b) report and disseminate the results, and (c) ensure appropriate interpretation and use of results.

Understand the Data, Including Limitations

Before utilizing institutional data, including student engagement data, to inform policies and practices, researchers must ensure the quality of data. Three important characteristics of data quality to consider are response rate, sampling error, and proportional representation. Sample size and the number of respondents play a large role with low response rates or response counts challenging the quality of data. Sampling error estimates how much sampled responses could differ from the responses of all students at the institution. It is also important for data to represent the student population of the institution. Should a certain subgroup be under- or overrepresented in a data set, institutional researchers should proceed with caution or make adjustments, such as weighting to limit the presence of bias (Chen et al., 2009).

Report and Disseminate the Results

Researchers must oversee how data are used and disseminated. In creating a culture of evidence, they inform internal and external stakeholders of what the assessment data say and how these

data could be used to improve teaching and learning (Banta, Pike, & Hansen, 2009) and to ultimately increase student success. Along with *what* is disseminated, researchers should be mindful of *how* results are disseminated (Kinzie & Pennipede, 2009). Written annual reports and oral presentations to faculty members, administrators, and students are two examples of how dissemination occurs (Banta, Pike, & Hansen, 2009). Knowing what will be best for a target audience requires knowledge of what has been effective in the past. For example, faculty members may simply want relevant information about their students or may want more detailed statistical analyses (Bers & Seybert, 1999). For the researcher to effectively report information, they need an understanding of the group they are trying to reach.

Ensure Appropriate Interpretation and Use of Results

By involving faculty, staff, and students, researchers ensure that findings will be utilized in various departments and programs and that these departments and programs will dig deeper into the results (Kinzie & Pennipede, 2009). Campus committees are helpful in exploring the effectiveness of programmatic efforts and using data to improve programs and services. Institutional researchers are often called on to serve on these committees and contribute their knowledge to discussions and decision-making as these committees use assessment data to improve their efforts (Banta, Pike, & Hansen, 2009).

Nelson Laird, Smallwood, Niskode-Dossett, and Garver (2009) recommend ways to connect faculty members to the work of assessing student engagement. First, the authors encourage researchers to reach out to faculty as a source of data. At this point, faculty can provide helpful observations on student engagement and reflections on their own teaching practices. Second, define faculty members as the target audience and users of assessment data. In addition to being consumers of engagement findings, faculty can serve as data analysts and disseminate findings from student engagement surveys. Finally, faculty members are the beneficiaries of data. Because assessment using student engagement data produces knowledge about undergraduate education, faculty members can benefit from research findings by participating in follow-up activities. Such activities could include faculty development workshops which have been created and improved based on information gleaned from assessment of student engagement.

The involvement of faculty members and other stakeholders (which includes administrators and students) is vital to identifying the institution's goals for student engagement. External stakeholders, such as employers and representatives from the community, can also help identify goals to meet the public need (Banta, Pike, & Hansen, 2009). Researchers in the responsible functional areas are important in understanding the perceptions of these stakeholders in the goal-setting process and ensuring that stakeholders accurately interpret and use results. As a result, researchers must be prepared to provide data that inform the planning that is required to address the concerns of internal and external stakeholders.

Recommendations for Use of Student Engagement Data

Researchers have consistently found that levels of engagement vary among students within an institution a great deal more than they vary between institutions (Kuh, 2003). Therefore, colleges and universities have an obligation to do more with student engagement data than simply package and disseminate it to campus stakeholders. We recommend the following:

1. *Analyze student subgroups*. Analyzing institutional data by looking at student subgroups may uncover some of the unexplained variation in student engagement, sensitize the researcher to students who are less likely to be engaged, identify opportunities for compensatory effects, and generate more actionable results.
2. *Link engagement data to other student records*. Merging engagement data to school records such as transcript information, enrollment data, high school grades, and standardized test scores, can uncover more variation of the undergraduate student experience (Chen et al., 2009).
3. *Compare student cohorts over multiple years*. Many institutions collect survey results across multiple years to facilitate longitudinal analyses. This makes it possible for researchers to compare different cohorts in the same class (e.g., first-year students in 2009 to first-year students in 2011) to see what impact any curricular or programmatic changes have had on the students' experience. Researchers again play an important role here by assessing student learning and development and tracking student progress over time (Banta, Pike, & Hansen, 2009).
4. *Tailor results to specific stakeholders*. By connecting results to the specific goals and interests of different stakeholders, researchers are more likely to ensure that results will get noticed and used to improve teaching and learning (Kinzie & Pennipede, 2009).

Conclusion

Gonyea and Kuh (2009) draw from Terenzini's (1993) work to describe three essential intelligences for researchers: technical and analytical intelligence, issues intelligence, and contextual intelligence. Technical and analytical intelligence requires competence in various methodological skills and awareness of relevant campus information, such as student demographics and program characteristics. In regards to student engagement, we have provided an overview of the importance and foundations of student engagement and the instruments that measure it. Issues intelligence requires an understanding of the current issues and problems on campus, which may call for the researcher's technical and analytical intelligence. The institutional uses of student engagement data discussed in this chapter highlight ways in which colleges and universities have drawn from their knowledge of student engagement to address campus issues or areas for improvement.

Contextual intelligence requires informed perspectives on the historical and cultural contexts of the institution itself and of higher education in general. For example, the concept of student engagement as a means to better understand student success has become more common in recent decades as a response to changes in the public's expectations of higher education outcomes, including evidence of increased transparency and efficiencies. With the growing emphasis on assessment, accountability, and transparency in higher education, researchers will need to explore new ways to effectively communicate student engagement results. It is vital that researchers possess these competencies if they are to be successful in promoting student engagement in educationally purposeful activities that increase student success at the institutions.

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Assessment in the "Pure" Disciplines

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Recognition of differences that exist in disciplines is important to developing a better understanding of how to assess student learning and success. Students select different disciplines for study because they have different perceptions of the knowledge, skills, and abilities required to be successful in those disciplines. Professionals involved in assessment must possess understanding of how a discipline's shared cognitions, beliefs, and identities contribute to diverse student perceptions. The topic of student assessment within the many academic disciplines is thus disparate and broad, making it difficult to start a discussion on this subject. Though a number of frameworks are available (e.g., Classification of Instructional Programs or CIP Codes), we believe the Biglan model (1973a; 1973b) is especially appropriate for framing our discussion. The model divides disciplines based on three primary dimensions labeled as Pure/Applied, Hard/Soft, and Life-Non-Life. These three dimensions yield eight primary groupings—four groupings for "Pure" disciplines and four for "Applied" disciplines. This chapter focuses on issues impacting assessment in those disciplines that fall within the dimension Biglan identifies as "Pure" (i.e., those which are theoretical and consequently studied primarily because of interest in the subject itself).

The chapter is organized to provide a framework within which the reader can visualize differences that impact assessment of student success in the "Pure" disciplines. First, we describe the Biglan model and identify those discipline types that are considered "Pure." This discussion is followed by identification of theoretical concepts that support or challenge effective assessment of student learning and success—shared meaning, contextual understanding, and sense-making. The chapter closes with a discussion of the role of domain identity in understanding the "Pure" disciplines and how nuances among these disciplines affect assessment of student learning and success.

The Biglan Model

In 1973, Anthony Biglan (1973a, 1973b) conducted research to determine how to arrange academic fields into disciplines based on certain shared characteristics. In developing his typology, he used volunteers to determine, based on a multidimensional scaling analysis, where

various academic fields of study were distributed along three axes or dimensions. Based on the similarities within the patterns and groupings observed, he labeled the dimensions as:

- *Pure/Applied*: Whether the subject matter is studied for its own sake or because it is useful for other purposes.
- *Hard/Soft*: Hard disciplines include those fields where there is substantial agreement among scholars as to the methods used to study and conduct research in a given field whereas soft disciplines usually have a wider range and more dispersed range of methods that are used for research and study as well as far less agreement among scholars within the field as to which methods are "legitimate" or "best."
- *Life/Non-Life*: Disciplines based on whether the subject matter studies living organisms or not.

To develop a context for our subsequent discussion, we focus on the Biglan groupings shown in Figure 1. These groupings show those disciplines categorized as "Pure."

Table 1. Biglan's "Pure" Groupings

Pure—Hard—Life	*Pure—Hard—Non-Life*
Botany	Astronomy
Entomology	Chemistry
Microbiology	Geology
Physiology	Mathematics
Zoology	Physics
Pure—Soft—Life	*Pure—Soft—Non-Life*
Anthropology	Communications
Political Science	English
Psychology	Foreign Languages
Sociology	History
	Philosophy

The groupings from Biglan's original research have been verified by numerous scholars over the years using a number of other independent variables. Notable are studies that focus on research output and socialization (Cresswell & Bean, 1981); faculty salaries and instructional staffing (Muffo & Langston, 1981); epistemological beliefs (Schommer-Adkins, Duell, & Barker, 2003); administrative roles of department chairmen (Smart & Elton, 1976); academic administration (Smart & Elton, 1982); and reward structures (Smart & McLaughlin, 1978). In other words, the Biglan model has not only been sustained over the last few decades but has been found to be quite robust and consistent in demonstrating useful results over time.

In examining the original Biglan groupings, one must consider that Biglan's original work was conducted in a land-grant university, so some of the disciplines may appear unusual to

a practitioner working at a different type of institution. At the same time, there are many fields and sub-fields of study that are not included among the original Biglan lists of disciplines, such as the professions (law, medicine, pharmacy, theology, etc.). Further, while the names of some disciplines may—and do—change depending on academic fashion and even marketing, the concepts underlying the dimensions remain sound. A new discipline may be categorized where the former discipline was placed unless it is truly a new and different discipline with significant distinguishing characteristics. To accommodate continual changes in academic disciplines and the development of new fields and sub-fields, subsequent studies have added disciplines (e.g., Stoecker, 1993, in the health sciences), but it is possible that some of the disciplines within an institution have not been categorized into Biglan categories. If that is the case, it is best to read by analogy how the following discussion can best be applied based on how a particular situation fits within the Biglan model.

Before we begin a discussion of how to approach assessment within the "Pure" disciplines, it is important to ask why the Biglan method of categorization is relevant to discourse on assessment, in particular assessment of student learning and success. Although one could write a treatise in response to this question, in short, assessment in each discipline fundamentally depends on how the criteria for student outcomes are determined to be evidence of student learning and success and why these criteria are acceptable to those teaching in a particular discipline. Since it is well accepted that different disciplines often have different criteria, the question as to how those criteria are communicated, not only within a discipline but across disciplines, is important in this dialogue. In addition, the criteria and evidence used to measure learning and success must also be conveyed in a common language within the discipline in order to be effective and credible to those practicing within a particular discipline. This need for commonality and consistency in developing criteria and identifying appropriate evidentiary measures is why categories are useful tools. Humanists, as an example, communicate via written text and oral presentations. Evidence of learning among students whose disciplines fall within such a grouping are more likely to use those modes of communication and require evidence of expertise in those areas. Physical scientists, on the other hand, are much more likely to lean on experimentation and computation as styles for their communication and as criteria for measuring effectiveness. If styles and criteria are mismatched, or used in a different discipline, then it is possible that the criteria and means for valuable and meaningful assessment may become severely compromised.

Some argue that such a specialized view of the disciplines holds true only at large universities where faculty reside in large departments separate from those in other disciplines. It is certainly the case that at smaller institutions faculty must interact on a more frequent basis with those whose academic training is different from their own. As a result, they are more likely to have a less rigid view of what is acceptable in terms of their own discipline. However, once in their classrooms, faculty use many of the same textbooks and are preparing their students for the same graduate schools and careers as those at larger institutions, so their assessment criteria must be similar to those of their peers elsewhere in order for their students to be competitive. This is

particularly true where there are state licensing examinations or national certifications that require consistency and uniformity in assessment criteria and methods for evaluation. Therefore, by utilizing examples from Biglan's "Pure" groupings, we can discuss the proposed value of understanding and developing techniques that allow us to better develop assessment tools.

Framing the Discussion: Shared Meaning, Contextual Understanding, and Sense-making

The Biglan model is likely consistent with what you may instinctively believe—that the different disciplines are unique. As a result, the scholars within these disciplines likely mirror this uniqueness through different attitudes and beliefs about assessment priorities and techniques. You may also discover that practitioners in one discipline think and communicate very differently than those in other disciplines. This may be particularly self-evident among scholars in the Pure-Hard (Life or Non-Life) and the Pure-Soft (Life or Non-Life) groupings. Tensions between those in the "hard sciences" and those in the "soft sciences" often exist based on what are considered perceived differences and scholarly goals. Many misunderstandings or inabilities to find commonalities are often the result of an inability to understand the academic emphasis that is placed on the development of certain skill sets and how those skills sets translate into meaningful criteria for assessment. For example, the ability to understand social relationships between characters in a novel in a British literature class may be significantly different from the empirical need for skills that demonstrate hard data extraction in a geology class. Yet, a closer examination of the fundamental skills required in any discipline may reveal that the gap is not as wide as perceived and that the ensuing chasms of understanding are really the result of a lack of shared meaning and contextual understanding in communication between disciplines.

According to Salter and Hearn (1996), there are three primary challenges in bridging this gap between disciplines—language, reception, and translation. Understanding these three challenges is important since scholars within a particular field often develop commonalities of communication and shared understanding. The scholars implicitly form a community of practice that stems from a unique social identity and culture. The ability to share cognitions, beliefs, and methodologies within a group facilitates coherent organization and response to change and contributes to coordinated efforts and process efficiency. Without distributed cognition (Hutchins & Klausen, 1996; Salomon, 1993)—where knowledge is shared by those with common tools—issues of translation where cognates must move across disciplines is problematic. Different disciplines have different communities of culture about cognates within their fields. In other words, there are epistemologies (Bella & Williamson, 1976) that reduce credibility across disciplines due to differences in linguistic meaning. These challenges in linguistics contribute to the language challenges that deepen the divide between the disciplines (Salter & Hearn, 1996).

Word choices, phraseology, semantics, and referential markers are often understood without discussion that facilitates functionality within group-shared cognition. For example, the word "partner" has many practical business meanings that are used by laymen to describe

numerous business arrangements whereas to a legal scholar, the word “partner” is specific to a type of entity known as a partnership rather than, for example, a corporation or nonprofit organization. Since words have contextualized meanings that derive from a variety of sources including normative belief, it is advantageous to develop a common language so as to minimize misunderstandings and misinterpretations. Other emergent issues may pertain to the distribution of scholarship—publication in peer-reviewed journals or authoring mainstream textbooks. In some disciplines, changes to content are so rapid that authoring a textbook may be an exercise in futility whereas in other areas it is a well-accepted and acknowledged practice (Bruce, Lyall, Tait, & Williams, 2004).

The concept of social constructionism—the ability to construct meaning and share understanding that promotes collaboration and collegiality—provides a framework by which we can better understand some of the constructs that contribute to the conversations about faculty members and student success within the disciplines. It is well-established that the organization of knowledge is integral to the development of meaning and understanding (Maslow, 1954). Makela (2002) further proposes that in order to develop a common understanding, it is necessary to partake in shared experiences that develop mutuality of meaning. Common understanding is further defined as including five components: shared ways of thinking, shared ways of operating, shared knowledge, shared goals, and trust. It is easy to see, based on these identifiers, that practitioners within a discipline community are better positioned to develop trust, shared goals, and mutual expectations whereas “outsiders” must overcome the hurdle of residing outside the culture of shared meaning. Since the forming and development of shared meaning and understanding affects communication, it is easy to understand the need to develop methods to build shared meaning and common understanding (Aula, 2000).

It is also recognized in social psychology and social constructionism that sense-making (Choo, 1998; Weick, 1995) is important in the construction of frames of reference that allow for meaningful interpretation. As a result, sense-making allows for the production of shared meanings and understanding that facilitate effectiveness and coordination of practice among and across disciplines. Inherent in this context is the notion that culturally formed contexts (Mercer, 1994) contribute to the social-interactional nature of the community of practice. Because the heuristics within each discipline may be unique, finding ways to translate uniqueness without losing pedagogical significance or substantive significance is the key to understanding how to bridge the elusive gap which hinders collaboration between disciplines. There is little dissent that building bridges—particularly between the hard and soft within the Pure disciplines—is of benefit to all impacted by the divides (Wilson, 1998). The expertise that exists within the Hard and Soft-Pure disciplines can be garnered so as to better inform all areas of teaching, research, and assessment if an openness to perceptions, attitudes, and norms is prioritized by those within a community of practice toward those outside the discipline.

The implications of building bridges between the disciplines are huge for faculty assessment of student learning. It is probable that many faculty members have wondered at one time or another why certain students from other disciplines or majors have struggled within their

classes. For example, why do some engineering students struggle with analytical writing that requires well-constructed sentences within logically flowing paragraphs? Why do some law students have difficulty thinking in linear lines that emphasize bullet point delineations? Why do some students struggle with conceptualization while others do not? These same questions, which may require a discussion beyond the scope of this chapter of learning styles and preferences, exist for faculty members within the multitude of "Pure" disciplines as they assess student learning and success. The research on learning styles and preferences does support this idea. For example, research by MacDonald (1987) confirms what may be unstated among us—the different disciplines esteem different skill sets and have different goals. He reports that those in the social sciences often emphasize the reduction of large quantities of data to workable generalizations whereas those in literature and language may stress the ability to glean insights from interpretative techniques applied to expanding one's understanding of a particular text. Those conducting empirical research in psychology are disciplined to develop a methods section that allows other scholars to reproduce and re-test the empirical research. This requires a certain level of specificity and descriptive detail in the methods section that may be unfamiliar to a historian. For some it may be the idea which drives the research rather than the proposed hypothesis. It would be easy to identify the various differences which range from the citation method to the purpose of footnotes. However, more important is emphasizing the fact that despite dissimilarities, understanding these differences can promote shared meaning and common understanding that contribute to effective assessment of student learning and success.

In summary, there needs to be an ongoing and purposeful endeavor to understand where the obstacles to communication and cooperation among disciplines exist and how to overcome them both inside and outside the disciplines. This requires that we acknowledge that prejudices may color perspective and contribute to the inability to transcend differences. This requires recognition of translation issues—movement and reception of knowledge and information across and between disciplines—by emphasizing that language (choice of words, semantics, meaning-construction, etc.) must be re-constructed while stressing but not compromising structural integrity (to use an engineering-oriented context) or interpreted within the context of the specific facts unique to the broader interdisciplinary community of practice (to use a law-oriented context). Participation in a broader community requires self-awareness of frames of reference, paradigms, and socially-constructed beliefs as well as a willingness to acknowledge existing boundaries that border specific disciplines and a willingness to actively engage and dialogue in ways that foster the development of a common conceptual language. Since it is common to define disciplines by cognate specificity, it is also common to have a developed sense of language and understanding that is pervasive within the discipline as a positive construct promoting community and facilitating expertise, pedagogy, and assessment of student learning. However, while the positives within the community may serve it well, the challenge is to think beyond the boundaries of the specific discipline and to overcome pre-existing paradigms in favor of developing broader relationships. This in turn will enable academicians to support student

learning and success through a better understanding of how to construct shared meaning, develop contextual understanding, and build on the concept of sense-making.

Framing the Terrain Using Biglan and Domain Identity

Educators, academicians, scholars—whatever the terminology—are usually defined by, and define themselves by, domain expertise, areas of research, and/or doctoral discipline. In academia, one's pedigree is often directly linked to one's standing as a domain expert and one's academic productivity lineage. A physicist, for example, may seek input and collaborate with a mathematician on the proof for a working hypothesis, but the physicist is still a physicist and the mathematician is still a mathematician. The identity of each is directly related to his/her domain expertise thereby generating his/her domain identity. Similarly, research suggests that the adoption of an identity status by students is important to successful outcomes in higher education (Was & Isaacson, 2008).

Biglan's research reveals a grouping of domains, if unintentional, based on family lineage and kinship. This raises important questions. If science belongs within the empirical realm and literature in the aesthetic, then how do we construct meaningful communication with our distant relatives? If our domain identities derive and develop from disparate practices or cultures, then how do we learn to "visit" (to use Texas vernacular) if we are from New York? Schwab (1964) defined two main principles for identifying structures within a discipline: substantive and syntactic. Substantive principles, as the name suggests, are inherently tied to concepts regarding the subject matter or content domain whereas syntactic structures pertain to the methods used to collect data or organize information. These principles directly relate to a practitioner's domain identity and the relevance and sense-making of those within and those without. Most of us in academia identify ourselves according to our domain identity by recognizing similarities with our "brothers and sisters" and noting differences with our distant cousins. Few would debate that chemistry and literature are distant cousins.

According to Becher and Trowler (2001), the complexity of establishing an identity extends beyond an initial domain into the web of sub-cultures within an institution which may include numerous artifacts, traditions, and entrenched ways of knowing or doing. This larger community of practice influences and perhaps even manipulates the micro of domain identity where teaching practice, knowledge production, and territory constrain the walls of domain identity. This is compounded by the human factor that all individuals seek, in some way, to distinguish themselves and establish existence meaning, particularly in larger and more complex organizations, such as larger institutions of higher education or the Academy as a larger unit. Furthermore, many in academia may not be attentive to or aware of the factors that constrain and mold their domain identity. Nor is there a significant motivator to examine the pretext of the unstated, "they are different," or "they are not us," in order to notice and examine the practices of identity formation that contribute to non-shared practices. In fact, there are often reward incentives for uniqueness, legitimization through external channels that support the notions of

domain identity, and internal power struggles (Castells, 1997) that inhibit the development of collaborative understanding that contributes to shared communication.

As a result, it is apparent that not only are there social, cultural, and organizational issues inherent in the untangling of the disciplines, but the journey is riddled with philosophical questions such as: Are there truly distinct ways of thinking and knowing within disciplines? Is there a guiding hermeneutic among related disciplines? Are there normative and epistemological questions that must be reconciled before motes of misunderstanding can be dammed? While it would be an interesting academic exercise to explore these questions, the immediate task is to explore the utility of the Biglan model as a starting point for discussions about the disciplines.

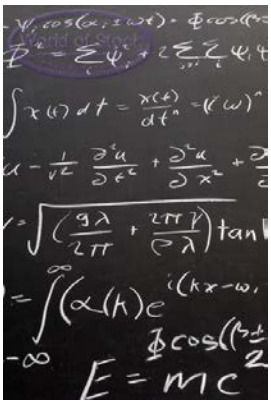
The Biglan groupings appear relatively easy to understand at first glance. For example, the categorization of the biological sciences as Pure-Hard-Life and the physical sciences as Pure-Hard-Non-Life appear rational. Those disciplines share well-accepted scientific methods of exploration and interpretation. Norman, Eva, Brooks, and Hamstra (2006), in a study of expertise in medicine and surgery, identify domains in which Biglan disciplines falling in both the Pure-Hard-Life and Pure-Hard-Non-Life dimensions are a prerequisite requiring both analytical and experiential knowledge. They noted the operation of multiple processes in reasoning and deduction as well as the need for forwarded reasoning and the role of cognitive structures, such as schema, in knowledge organization. In many of these disciplines, new knowledge is primarily generated through investigation and research.

In contrast, some of the Pure-Soft-Life and Non-Life disciplines emphasize abstract thinking rather than applied thinking. In English, for example, an emphasis may be placed on the ability to coordinate multiple goals that are very general requiring the ability to think in complex patterns rather than in linear fashion. In research conducted on the development of expertise in professional writing, Kellogg (2006) notes the importance of verbal ability, concrete language usage, and managing cognitive load, as well as emotional challenges. Deliberate practice is also an identified skill set that is common to both foreign language acquisition and English. Voss and Wiley (2006), in research on the development of expertise in history, acknowledge that “an expert is assumed to have a general and specialized knowledge as well as facility in the skills of research and writing” (569). It may be safe to state that this definition of expertise, while in the context of the historian, is generally applicable to all PhDs. The difference is that

> Domains, such as history and political science, have conceptual structures that allow relatively little opportunity to use mathematics, formal logic, or controlled experimentation. Instead reasoning and problem solving usually are verbal (not mathematical), with evidence for a solution presented as an argument, usually developed in relation to particular facts and interpretations. Such problems are termed “ill structured,” having more than one possible answer, requiring identification of constraints, and having no agreed-upon solution. (p. 569)

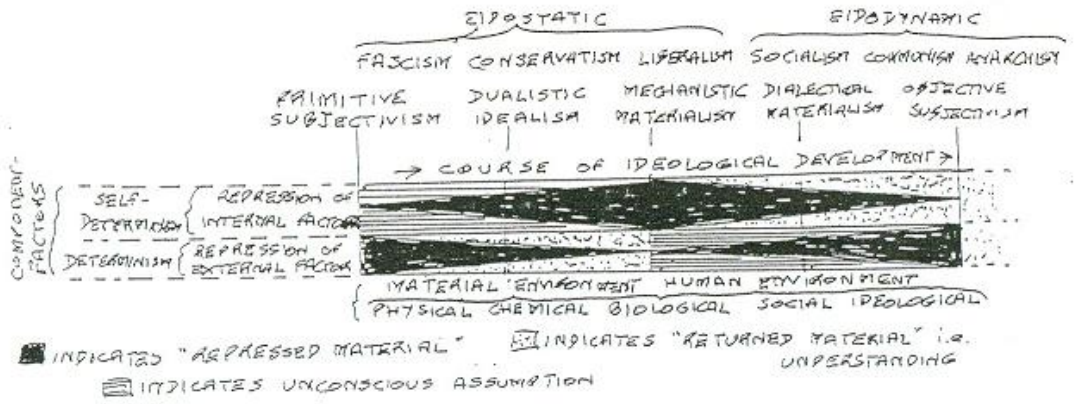
If you just had an “ah, ha” moment, take a breath of relief. Imagine that you are an expert in the Pure-Soft dimension and have wandered into the offices of an expert in the Pure-Hard dimension. Do you ever wonder how in the world they can communicate in symbols?

Figure 1.



Now, imaging that you are an expert in the Pure-Hard sciences, do you ever question the utility of a philosophical debate over the reality of a “chair” or whether Marxian ideology contributed to the riots of the 1960s? Do you ponder why there are so many strange cognitive psychology terms in this chapter?

Figure 2.



While the visual images convey the tensions, the point is not that all disciplines portray idiosyncratic practices and habits, but that we can develop meaning and relevance in communication so as to garner each other’s expertise in designing and developing meaningful assessments of student learning and success. How can we transcend dimensions that are legitimately circumscribed by the discipline? For example, if pursuing a single answer in a

highly structured domain, how can we design instructional activities or assessments of student success if our expertise is developed from a dogma in which there is no absolute answer? Similarly, one assessor may prefer assessment based on outcome using summative data while another assessor may focus on process using formative data.

Our purpose is not to suggest that we forsake the lineage of our disciplines nor is it to diminish the importance of the markers that denote the methodologies and practices of our identity domains. It is, instead, to draw attention to the mere fact that some individuals may not be aware that they speak in symbols or have active experimentation as fundamental to the quest for a single answer; others may not perceive that endless dialogue with abstract words and reflective thought is burdensome on those who are outside the dimension in which they seek refuge. In drawing this attention to differences among domains and disciplines, we hope to reinforce relevance as critical to communicating in a shared language; Pure-Hard meets Pure-Soft.

In order to develop meaningful communication about assessment of student learning and success in the "Pure" disciplines, we need to acknowledge that the "identity-created" ways of thinking and knowing are relevant. Few would argue that as educators our goal is to develop contextual and interpretative relevance for our students so that memorizing the dates surrounding the American Revolution, learning the language of calculus, or utilizing the principles of formal logic are not just a vacuous academic exercise. This same goal must motivate us to take the time to establish a common language, learn how to interpret its linguistic syntax, develop the skills to move from novice to expert, and then practice our newly shared language. The rub is that this venture requires time and effort—both of which are precious resources in academia—particularly when there is no extrinsic incentive or worse, there are extrinsic barriers (such as grant and publication expectations, politics, a lack of resources and the time to build bridges). Yet these limitations, while institution-wide, are often micro and shortsighted while a macro perspective, which values the need for collaborative and interdisciplinary endeavors, has long-term sustaining effects. Assessment of student learning and success is also impacted by these same values and limitations. For example, Muehrer, Salovey, Abdelmonem et al. (2002) report that there have been long traditions of encouraging medical research between the health sciences and the behavioral sciences. Unfortunately, they also report that research efforts have not benefitted from collaboration primarily because the two domain groups employ different methodologies, theories, and dissemination venues. In addition, the physical plant and layout of the institution often present barriers to "cross-talk" as do the variance in professional incentives among academic disciplines. Interestingly, in their research on behavioral scientists, Muehrer et al. found that the challenges may differ for the "Pure" and "Applied" disciplines:

> Basic behavioral scientists often are motivated to test a theory or conceptual model and/or discover underlying interactions among biological, cognitive, affective, or social processes that account for a health phenomenon. Real-world considerations may take a backseat to theory testing. Furthermore, for many behavioral scientists housed in schools of "arts and sciences,"

> undergraduate teaching may account for substantial amounts of time. Grants are written primarily to support research, provide stipends for graduate students, and cover summer salary for the investigator, although this varies considerably across institutions and settings. Public health scientists, in contrast, are more likely motivated by real-world problems and the opportunity to demonstrate that a biological, behavioral, social, or economic variable has a direct influence on a health outcome in an ecologically relevant context. Theory testing may be less relevant. The importance of teaching may vary considerably but is often a less self-defining aspect of one's professional identity, especially among public health scientists in medical schools (rather than in "arts and sciences"). Grant support, however, is often more critical to public health scientists, as they are often expected to cover a substantial proportion of their academic year salary with such funds, as well as support their research and graduate students. (pp. 260-261)

Concluding Comments: Discipline and Student Success

The challenges identified in this chapter have consequences for the assessment of student learning and success in "Pure" disciplines. If not done properly, assessment of student outcomes in the "Pure" disciplines can result in over- and under-valuing a student's achievements. To overcome these very real challenges, interdisciplinary collaboration for supporting assessment of student success, or for any other purpose, requires a commitment of time and energy as well as the development of common grounds for communication among faculty members and students in many disciplines. The Biglan model adds value in that it provides a starting point for sorting out the commonalities or dissimilarities of the disciplines where the level of interaction depends not only on important shared communication skills but on interpersonal and listening skills. Such skills represent different perspectives, types of expertise, negotiation and compromise skills—as well as values that reflect the importance of diversity in domain identity. Finkelman (2006) also points to the need for an overall awareness of one's own strengths and weaknesses. This requires attentiveness, practice, and an awareness that one's domain identity may be reflected in the choice of majors and that the discipline housing the major is itself saturated in jargon and cultural norms that must become porous to the domain identities of others. As noted by Martin-Rodriguez, Beaulieu, D'Amour, and Ferrada-Videla (2005), traditional boundaries must be loosened to develop a mutuality of purpose and an atmosphere for sharing in one another's uniqueness. Because students take courses across Biglan groupings of disciplines (e.g., chemistry majors taking English courses), development of a respect for and an understanding of domain identities is the point at which student success can truly be understood and measured as each student progresses through an academic career.

All too often we are so preoccupied with the legitimate needs and demands of our daily lives as academicians that we fail to recognize our own entrenchment. We must recognize that

faculty and students alike develop a domain identity, and we must understand how this identity is related to shared meaning, contextual meaning, sense-making, and ultimately, to choice of discipline. There is little dispute that our disciplines have cultures and perhaps even subculture upon subculture with varying norms, rituals, and practices. Our disciplines often mandate methodologies and pedagogies that are rarely reviewed or even challenged as belonging to specific Biglan groupings. Unfortunately, these cultural, political, social, and identity forces are not unified and often fail to guide us toward an understanding of what constitutes success for students outside of our discipline—particularly when there is little incentive to do so. On the other hand, not only do disciplines provide a means for a shared scholarly culture (Kuhn, 1970), they provide a safe haven for cognitive growth and intellectual values of our students by providing a common language that is essential to sharing ideas, building community, and contributing professionally to the discipline. Although there may be epistemological differences and debates as to intrinsic interest and value, there is no doubt that the external world outside the walls of the institution changes, student needs evolve, and professional expectations shift. Our survival and the success of our students depend largely on our strategic vision, our awareness of environmental change, and our understanding of whether we are successfully meeting the needs of students.

There may be some who are already on the bandwagon and for whom acknowledging issues around domain identity as important to studying student outcomes is well accepted. These academicians may already be changing discipline-specific patterns of language, creating relevance, and broadening communication efforts. For others, this chapter may be an eye-opener. There is a realization that developing effective assessments of student success across disciplines and identifying common indicators of excellence has been an exercise in futility because symbols and words do not speak the same language. For others, the process is somewhere in the middle where there is an awareness that tigers and elephants make different sounds and the meaning of words is radically different. As Reich and Reich (2006) note:

> Conflicts emerged over distinctly different work practices and meanings associated with specific words during discussion. For example, the term "distance" was viewed by the entomologists as an independent source of evidence (geography) combined with chemistry while the statisticians treated it as the outcome of a computational process. (p. 52)

Reconciling differences and building understanding across disciplines in higher education is challenging, especially when students are required to take courses in a content area outside their majors. The assessment of student success in Biglan's "Pure" disciplines, in which students may routinely take courses outside their discipline, is thus fairly complicated and requires inter-disciplinary cooperation. The key is to recognize that effective assessment of student learning and success is a process that begins with cooperation and understanding across or among disciplines, a desire to develop and broaden our understanding of what constitutes success, and a willingness to accept domain identity infringement.

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Assessment in the "Applied" Disciplines

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This chapter extends assessment to those disciplines that Biglan (1973a, 1973b) labeled as being "Applied," in particular Applied-Soft-Life. These disciplines focus on personal growth, reflective practice, and lifelong learning, and are concerned with enhancement of professional practice. Examples of the disciplines that fall into the applied categories are as follows:

Table 1. Biglan's "Applied" Groupings

Applied—Hard—Non-Life	*Applied—Hard—Life*
• Ceramic Engineering • Civic Engineering • Computer Science • Mechanical Engineering	• Agronomy • Dairy Science • Horticulture • Agricultural Economic
Applied—Soft—Non-Life	*Applied—Soft—Life*
• Accounting • Finance • Economics	• Educational Administration and Supervision • Secondary and Continuing Education • Special Education • Vocational and Technical Education

Identifying disciplines using the Biglan model is useful because each discipline has its own teaching methods and accepts different types of data as evidence of learning. As a result, each discipline has its own assessment subculture. In order to communicate effectively about student learning within that subculture, one must know and respect what is valued by faculty and students who enter a specific field of study. The three dimensions used by Biglan to identify the categories of disciplines are described in the previous chapter. They provide a starting point for assessing faculty and student values.

The groups of applied disciplines as reported by Biglan in 1973 are of course set in time and place, so the list is necessarily limited. For instance, today ceramic engineering is probably

called materials science or materials engineering—or some variation of these labels. Nevertheless, the disciplines would likely still be in the same Biglan category using the same sorting procedures and group of volunteers. Likewise, some of the education disciplines might have slightly different names today but would remain in the same category. Other business disciplines such as marketing and management would likely be put in the same category as accounting and finance, but a more expert panel might move economics to the hard or theoretical category; it tends to be more theoretical in nature than the other business fields, as evidenced by the Nobel Prize in economics. So, while the categories are robust across groups, they are not entirely rigid and the terminology used to refer to them is not fixed.

What, then, are the practical implications for assessment of student learning from the insights provided by the Biglan research and validation that has followed it? The following sections provide two examples of broad areas in which there is substantial variation in methods used to assess student learning, even though both are considered "Applied" according to the Biglan categories. The first example focuses on health care, the second on education.

The Health Care Disciplines

Many studies (Biglan, 1973a; Roskens & Creswell, 1981; Stoecker, 1993; Hargens, 1996; Stark, 1998; Sinclair & Muffo, 2002) have been conducted and published using the three dimensions on which Biglan's classification of disciplines in higher education is structured: the Hard/Soft dimension, the Pure/Applied dimension, and the Life/Non-life dimension. The focus of this example from the health care sector will be on the Soft-Applied-Life dimensions. It begins by noting requirements for developing programs in health-related fields after which strategies for assessment of student learning are identified.

Requirements for Developing Programs

There are a number of procedures that must be followed in order to establish a discipline in health care. First, before developing a program, the institution must get approval from the appropriate state agency (for example, the Illinois Department of Financial and Professional Regulations, which also oversees the 2007 Nurse Practice Act and 2010 Illinois Rules and Regulations, the 1987 Medical Practice Act, and other health-related acts). The state agencies identify what needs to be considered as criteria for the faculty and what needs to be in the curriculum of the specific discipline. Once approval has been given by the state, then the institution can continue with the development of the program. Second, the program must then request regional accreditation from the appropriate institutional accrediting body (for example, the Higher Learning Commission. For the health-related disciplines, the program would also request accreditation from the accrediting body for the specific discipline. For example, the National League for Nursing Accreditation Commission (NLNAC) identifies what needs to be included in the nursing program and what areas need to be assessed (see: National League for

Nursing Accreditation Commission Standards and Criteria, Baccalaureate, 2008; National League for Nursing Accreditation Commission Standards and Criteria, Master's and Post-Master's Certificate, 2008).

The assessments required for accreditation at the regional and professional levels provide an important bridge to better understanding how student learning leads to success in the health care disciplines. Consistent with the Biglan "Applied" grouping, nursing and other health care arenas focus on the client as a human being and on understanding the total person physically, mentally, emotionally, socially, culturally, and spiritually. Furthermore, health care professionals—whether nurses, physicians, respiratory therapists, or occupational therapists, to name a few—are being prepared to deal with life and death situations. Courses for students in health care are identified based on criteria from the accrediting bodies, and student learning outcomes based on these criteria are expected to lead to successful completion of courses or programs.

Strategies for Assessment

As noted, institutional criteria for evaluating student learning are available through both regional and professional accrediting bodies. The Higher Learning Commission offers an example of an institutional assessment (Version 1:10/03, 2003): "The organization's goals for student learning outcomes are clearly stated for each educational program and make effective assessment possible" (Core Component 3a). The National League for Nursing Accreditation Commission offers an example of assessment criteria for a baccalaureate program:

> 4.5 Evaluation methodologies are varied, reflect established professional and practice competencies, and measure the achievement of student learning and program outcomes.
> 4.6 The curriculum and instructional processes reflect educational theory, interdisciplinary collaboration, research, and best practice standards while allowing for innovation, flexibility, and technological advances. (National League for Nursing Accreditation, 2008a, p. 4)

As shown in Table 2, when it comes to institutional assessment criteria, faculty (in nursing, as an example) have multiple levels of objectives to meet: program objectives, semester objectives, and course objectives that include in-class objectives and/or clinical objectives, which provide a foundation for assessing student learning.

There are many varied approaches to implementing assessment criteria for student learning in health-related disciplines. Student performance outcomes are measured using multiple approaches, to include required courses, external vendors, lab experiments and simulations, clinical application, and after-program assessment. Each will be discussed in the next section.

Table 2. BSN Course Categories/Program Outcomes/Course Objectives

Course Category→ Program Outcomes	Course 1: Concepts Basic to Professional Nursing[a]	Course 2: Nursing Care of Clients with Psychosocial Problems[a]	Course 3: Nursing Care of the Child and Family[a]
Outcome 1. Synthesize theoretical and empirical knowledge from the liberal arts and sciences with nursing as a basis for the practice of professional nursing.	*Objective 1.* Relate previously acquired knowledge of the liberal arts and sciences in the study of nursing. *Objective 2.* Demonstrate knowledge of the historical influences that have brought about the evolution of contemporary nursing. *Objective 3.* Explain the implications for health care as influenced by religious beliefs and practices.	*Objective 1.* Apply relevant theories and concepts from the liberal arts and sciences and nursing in the care of clients with needs related to psychosocial problems.	*Objective 1.* Apply relevant theories and concepts from the liberal arts, sciences, and nursing in the care of childbearing and childrearing families in wellness and illness.
Outcome 2. Express caring in professional interactions.	*Objective 4.* Demonstrate respect for the dignity and personal worth of each individual as foundation for developing a caring relationship.	*Objective 2.* Apply appropriate aspects of caring by using therapeutic communication skills in the development of therapeutic nurse-client relationships.	*Objective 2.* Apply appropriate aspects of caring using therapeutic interactions with individuals and their families.
Outcome 3. Implement the nursing process to assist clients throughout the life cycle in reaching optimal health by facilitating adaptation within their social system.	*Objective 5.* Relate the psychosocial and physiological needs of individuals to the promotion and maintenance of health. *Objective 6.* Utilize the nursing process in predictable situations to assist the adaptive individual in the promotion and maintenance of health. *Objective 7.* Demonstrate proficiency in psychomotor skills basic to nursing practice.	*Objective 3.* Implement the nursing process to facilitate the adoption of clients with needs related to psychosocial problems.	*Objective 3.* Implement the nursing process to facilitate adaptation of the parenting family and its members in the promotion, restoration, and rehabilitation of health.

[a]Specific focus of courses within which desired course objectives are articulated.

Source: College of Nursing (2012, August). NLN Self-study for the NLNAC, Saint Francis Medical Center, Peoria, IL.

Assessment of learning through required courses. Testing in required courses is a frequently used assessment tool throughout the duration of a program. Early in the programs of the health care disciplines, and sometimes later in the programs, health care-oriented students acquire core knowledge in critical areas such as anatomy and physiology. This may require working with cadavers or animal organs such as pig hearts, livers, lungs, brains, and kidneys (Brown, Hoadley, Kohtz, Kiefner, Weberski, Bonney, et al., 2008-2009). Students actually cut into organs and are able to identify various parts of those organs or of that body, after which they are tested on their knowledge of those areas. Future courses are based on having anatomy and physiology as foundational courses. Assessment of student learning is thus critical in that students need a strong foundation in these courses in order to be successful in the health care disciplines.

Another course that has application to the health-related disciplines is pathophysiology, which explores the abnormal conditions to which health-related individuals may have been or could be exposed. To assist with the learning process, faculty may use technology, such as I-clickers, in their courses. All students in the course are asked questions related to pathophysiology, and they respond to the questions written by the faculty member (Archer, Bentler-Lampe, & Rose, 2008-2009). The I-clickers are used to determine knowledge of pathophysiology at the beginning of each hour of content. Responses are tallied electronically, revealing the number of students who do or do not answer correctly. Discussion follows regarding the reason for the correct or best answers.

Novel in-class approaches to assessing student learning in the health care disciplines are also used. For example, in a research class, the faculty may assess critical thinking skills through use of film. Students view movies such as *The Fugitive* or *Medicine Man,* or read *Black Like Me,* and then using critical thinking to identify whether the ethical principles of research are used effectively in the scenarios presented.

Assessment of learning using external vendors. External vendors may be used in specific cases to facilitate and assess student learning. For example, many nurses, physicians, or respiratory therapists in health-related disciplines also need to know about medications (e.g., how medications work in the body, the possible side effects, the dosages, and how one medication interacts with other medications). An outside testing company such as Meds Publishing Total Curriculum Support (Assessment Technologies Institute, 2009) can be used to assist students in their understanding of this complex base of knowledge. Nursing schools have the ability to use the tests written for many areas of the nursing program, of which pharmacology is one. The students may spend 30 to 45 minutes per module learning about medications through use of these tests (Driscoll & Jacques, 2008-2009).

Other ways of assessing student learning include structured institutional tests or tests developed by outside agencies such as Health Education Systems (HESI) that provide testing that is tailored to a specific program (Morrison, Adamson, Nibert, & Hsia, 2008). HESI examinations may be given periodically over the progression of a program. Assessment activities may also include use of premade tests for a specific discipline, such as those of the National

League for Nursing. Cutoff scores are designated to indicate success throughout the program and what constitutes passing the licensing examinations. If students do not achieve the cutoff score, remediation in the specified area may occur and may include online questions and/or scenarios to which the student must respond.

Assessment of learning through lab experiences and simulations. Courses designed to support clinical preparation for the student generally begin with a clinical laboratory experience prior to taking care of real patients. When students perform health assessments for patients, which consist of taking health histories and completing physical examinations, they frequently practice on each other. After practicing on each other and in the lab setting, students must demonstrate proficiency before they can move out of that section of the class. Rubrics are used to allow the faculty to be more objective when assessing student learning. Points are given for each of the assessment areas in which students perform; pass/fail grades or letter grades are given at the end of the evaluation period (Diers, Mitchell, Vaughn, Meuser, Bailey, Smyth, et al., 2008-2009).

Other approaches to assessing student learning in health-related disciplines are made possible by technology. For example, students can now practice the skills they will eventually direct at patients by working with each other as noted above or by practicing with hard mannequins. In today's programs, the use of simulation bodies helps students learn in a nonthreatening environment. Scenarios are developed by faculty, several students work together in various roles, and students then react to the patient based on what the simulated patient is programmed to portray. The scenarios may be as simple as having students practice how to introduce themselves to a patient or to take vital signs—blood pressure, temperature, pulse, and respiration (Archer, Nelson, Blackert, Waite, McCann, Vaughn, et al., 2008-2009). Other scenarios may involve the patient having a fracture with a complication that needs quick action, a patient with lung surgery and chest tubes, or a patient with a blocked bowel with a nasogastric tube down his throat into the stomach (Webster, Garcia, Miller, Graham, Parnham, Rose, et al., 2008-2009). Other possible scenarios are a heart attack victim, a patient in respiratory distress, a patient with a brain stroke, or some other acute type of condition or critical care situation (Brown, Hoadley, Kohtz, Kiefner, Weferski, Bonney, et al., 2008-2009). The simulated mannequins respond to what the students do in their assessment and the care they provide. After students complete the scenarios, they are debriefed on what went well and what did not go well and whether the patient died when (s)he should not have (Saint Francis Medical Center College of Nursing, 2008-2009). These methods of patient assessment and student learning assessment are increasingly common in the health care fields.

Other disciplines—such as family/child studies, community health, and psychosocial nursing or medicine—may use role-playing simulations in assessment of student learning. For example, students may be placed in a practice situation with a mother, her baby, and family that requires that the student determine how care should be given to the clients both in the hospital or in a home-care situation (Shane-Gray, Schwarzentraub, White, Diers, Driscoll, Kingston, et al., 2008-2009). For community health patients, these types of simulations enable students to role

play how to care for poverty-stricken individuals prior to actually making in-home visits. Students learn to assess the patient, family, and the home situation so they can make referrals to social workers or to specific clinics (Bailey, Jacques, Mitchell, Bentler-Lampe, Briggs, Polanin, et al., 2008-2009). Similarly, role playing and simulations in psychosocial situations help students build skills and knowledge that enable them to understand how best to work with patients who are mentally or psychologically distressed or who exhibit abnormal behavior (Swisher, Donnelly, Coultas, Sheen, Hall, & Barth, 2009-2010).

Assessment of learning through clinical application. Many of the health-care-related disciplines are centered on specific patients or use hypothetical/real patient situations (case studies) for discussion in conferences or classrooms. Again, the focus is on the patient—that is, the "life" dimension of Biglan's model. When learning about the patient's medical condition, the treatment, the inclusion of patient/family in decisions, and the use of outside referrals, the student focuses on previous and new knowledge to learn about the patient's situation. The student pulls from anatomy and physiology, as well as pathophysiology (Archer, Bentler-Lampe, & Rose, 2008-2009), to understand what is happening with the patient. Many times students start with patients who are not acutely ill and then advance to the more complex patient under guidance of a faculty member or preceptor. Generally, if a real patient is being discussed, the student who cares for that patient will be required to provide vital information regarding the patient. Discussion generally occurs regarding whether the treatment was successful or whether changes needed to be made with specific goals set for the patient. This discussion helps to integrate class content with the real-life situation. If successful, the student learning that takes place should eventually lead to passing the licensing examinations.

Clinical work is extremely important and critical to successful student learning outcomes. After theory content has been discussed in the classroom, students who are becoming nurses, physicians, or respiratory or occupational therapists, for example, will work with patients who have real-life medical needs—including surgical conditions and respiratory conditions—or with patients who may need assistance with maneuvering in the workplace environment. Students need to prepare prior to giving care to the patients. They need knowledge that prepares them to understand the condition(s) that the patient has, what the diagnostic measures are, what the treatment is, and what is or should be ordered for that patient. In many cases, faculty members will discuss the patient with the student, whether in preconference or at the bedside. Patients are now becoming more involved in their care when this happens. After completion of the clinical day, briefings or post conferences are conducted to evaluate what student learning had occurred. At this stage, students are evaluated on the criteria set up by accrediting bodies (Brown, Hoadley, Kohtz, Kiefner, Weberski, Bonney, et al., 2008-2009).

Technology can also contribute to effective assessment of clinical work. For example, many courses in the health care disciplines are conducted online with a clinical component. The advantage offered by online modules is that students are able to work with discussions online (synchronous or asynchronous), to use virtual learning, and to complete courses without being

physically present. Clinical assignments are arranged with preceptors. The clinical assignments validate what is learned in class using appropriate forms of online learning and assessment.

The advances in student learning are clearly being broadened through the application of new technologies. As noted, the benefits are being confirmed through assessment of clinical work as well as through assessment of lab experiences and simulations. Exhibit 1 describes an exciting technology-supported approach that will potentially redefine clinical training, research, and education. Dr. John Vozenilek, Jump's chief medical officer, notes that "These exciting developments are not just about a new building, this is about using every tool in the toolkit—and building new tools when we must—to bend the cost curve and increase the quality and safety of the care we provide."

Exhibit 1. Jump Trading Simulation & Education Center

Jump Trading Simulation & Education Center, or Jump, is a collaborative effort by OSF HealthCare and the University of Illinois College Of Medicine at Peoria. Jump is a virtual hospital, combining actual medical equipment and the latest simulation technology for better education, performance training and research with the goal of ultimately improving patient health outcomes and lowering health care costs.

Built on the OSF Saint Francis Medical Center campus in downtown Peoria, the $51 million project was made possible, in part, thanks to a generous $25 million donation by Bill & Dr. Mary DiSomma and the DiSomma Family Foundation, and named after Jump Trading, a Chicago-based trading firm, in which Bill DiSomma is a managing partner.

"At the heart of medical education and at the heart of patient care, is communication," said Dr. Sara Rusch, regional dean, University of Illinois College of Medicine at Peoria. "It is learning how to sit down with a patient, face to face, and listen to them; it's learning how physicians and nurses communicate so that the whole health care team works together seamlessly. We will recruit and retain the best students, residents and practicing physicians because of Jump."

Another unique aspect of Jump is medical innovation, pairing of clinicians and engineers, including those at the University of Illinois. "These are the kinds of tools that will break open new fields of inquiry not imagined even a few years ago," said University of Illinois President Dr. Robert Easter.

Five hundred simulation trainings for physicians, clinicians, and first responders have already been scheduled in the first six months following Jump's opening.

http://www.jumpsimulation.org/

Assessment of learning after program completion. Graduates of programs in health-related disciplines generally take examinations after they complete the program. Criterion outcomes such as those of the National League for Nursing Accreditation Commission (whether for baccalaureate, master's, or doctoral nursing) require that the graduates complete the program and then, if a licensure exam is required, pass the exam "at or above the national mean"

(National League for Nursing Accreditation Commission Standards and Criteria, Baccalaureate 6.5.1, 2008, p. 6). For a certification test, the requirement is that "80% of the first-time candidates for certification exams will pass the exams" (National League for Nursing Accreditation Commission Standards and Criteria, Master's and Post-Master's Certificate 6.4.2, 2008, p. 6).These licensures and certifications serve as a cross-check on whether effective student learning has occurred.

Health Care Summary

A variety of measures are used in the health care disciplines for assessing student learning outcomes, whether for nursing, medicine, respiratory or occupational therapy, or other areas. As discussed above, each of the learning experiences at some time in the program provides opportunities for assessment of student learning. Whether the assessment is through paper/pencil testing, online testing, on-site proficiencies, institutional testing, or from testing developed by outside agencies, the accrediting body's criteria on which assessment is based helps define student success in the various disciplines. Furthermore, because much of what students learn in the health care arenas pertains to life or death situations, assessment is extremely important, not only for accrediting the program itself but also for institutional accrediting criteria. These criteria enable the program and institution to say that the programs produce effective and knowledgeable graduates.

Importantly, the assessment of individual student learning outcomes can result in both the confidence that students who graduate from these programs are prepared to be safe and competent practitioners and the confidence among students that they are being prepared to provide quality service. Additional information can be collected by sending post-graduation surveys to alumni and to employers who are knowledgeable about the profession. When feedback is given, the information can be reviewed and changes made by the appropriate committee or group.

In summary, the health care disciplines are varied and unique, but all disciplines focus on the individual patient, therefore using Biglan's Soft-Applied-Life dimension. The focus of the disciplines is on safe, effective care and treatment from the best health care individuals, whether nurses, physicians, respiratory therapists, occupational therapists, or other health care personnel. Criteria set by accrediting bodies enable the program and institution to be creative in assessing student learning about the discipline. Assessment criteria are a measure of both how well the student is achieving success and how successful the program is in helping students acquire the necessary skills.

The Teacher Education Disciplines

Like the health care disciplines, teacher education clusters in the Soft-Applied-Life academic dimension of Biglan's model. It is nevertheless quite different in the way that students are

assessed on educational content and experience. Like the health-care disciplines, teacher education disciplines address broad areas of skill development when preparing candidates[1] for the profession. This breadth requires a continuous program of assessment using a variety of instruments.

Strategies for Assessment

Areas for assessment of student learning in teacher education include content knowledge, pedagogical skill, appropriate dispositions toward the teaching profession, and field experience. Strategies for assessing each area of student learning are discussed in the following sections.

Assessing content knowledge with GPA and diagnostic examinations. Content knowledge is generally assessed at multiple points both before and during a candidate's studies. For example, a student may be assessed prior to admission to a teacher preparation program, prior to admission to certain courses and field experiences such as student teaching, and as a prerequisite for certification. Measures include grade point average (GPA) calculations and diagnostic content examinations aligned with state expectations. GPA measures must demonstrate meaningful alignment between the courses and relevant state and national content standards. In addition, for GPA to work as a meaningful measure of student learning, faculty members assigned to teach content area courses must agree upon both the standards for each course and the grading criteria. The process is complicated by the fact that colleges of education do not have control over the content areas, thus making it difficult to bring GPA assessment into alignment.

The diagnostic exam is becoming increasingly popular, in part because of the manifest challenge of developing valid and reliable measures based upon GPA. The use of diagnostic exams typically involves the use of released practice tests aligned to state and national standards. Such exams can be used as transition points for candidates prior to entering field experience. However, it is critical that candidates receive timely and meaningful feedback so that appropriate remediation can occur. The use of software assessment programs can assist in analysis of these data.

Assessing pedagogical skill mastery. Biglan (1973a, 1973b) classifies teacher education as a Soft-Applied-Life discipline due to its practical and contextual nature and its emphasis on higher-order thinking and "deep approaches" to learning. Accordingly, assessment in teacher education is grounded in a complex understanding of how learning occurs. Teacher candidates must demonstrate not only mastery of the subjects they teach but also the ability to match instructional decisions to the diverse needs of students. Candidates must also demonstrate the ability to match equally diverse physical, social, and emotional contexts within which learning occurs. They must show they can systematically select appropriate learning goals, design

[1] The National Council for the Accreditation of Teacher Education (NCATE, 2002) differentiates students in higher education programs from students in K-12 settings. NCATE uses the word c*andidate* when referring to undergraduate, post-baccalaureate, and graduate students enrolled in teacher preparation programs, while *student* is used when referring to children in K-12 settings.

effective instruction, conduct valid and reliable assessments, and use the resulting data to inform future teaching decisions. Colleges of education are obliged to develop equally complex ways to measure their students' ability to do these things. As teaching and learning are complex and contextual in nature, many abilities and skills (for example, pedagogical skills) that must be measured are essentially qualitative in nature.

It is important to note that colleges of education teach people how to teach. Before learning anything else, assessment strategies must be designed to determine whether teacher candidates can assess the intellectual, social, emotional, and moral development of their students, as all of these factors are crucial to sound instructional planning and the building of a positive and supportive learning environment. It is not enough that teacher candidates can accurately analyze and classify their students; they must also show that they can take that information and apply it to lesson planning and assessment. The complex and diverse nature of a classroom full of students must be purposefully matched to the design of lessons and the way learning is assessed. Consequently, any critique of a teacher candidate's work requires education faculty to first review contextual descriptions provided by the candidate.

After thorough consideration of these contextual factors, assessments must be conducted to determine whether candidates can develop learning goals that closely align students' personal and collective needs and the comprehensive learning environment with standards, expectations, and outcomes. Members of the education faculty also check to see that these goals represent an appropriate range of cognitive difficulty, including higher-order thinking skills. Candidates themselves then design an *assessment plan* consisting of a *pre-assessment*, *formative assessment*, and a *post-assessment*: The pre-assessment measures their students' existing knowledge, skills, and dispositions related to the learning goals; the formative assessment measures progress toward the learning goals; and the post-assessment measures mastery of the intended outcomes.

Confirming student understanding of pedagogy is critical to candidate preparation for a teaching career. Candidates design instruction aligned with the contextual factors, the learning goals, and the assessment plan, and education faculty judge and provide feedback on the quality of this alignment. After implementing their lessons, candidates must be able to use the data generated by the assessment plan to determine the impact of their lessons on student learning, to evaluate what learning actually occurred, and then to reflect on the entire process. Generally, colleges of education evaluate and assess a candidate's pedagogical skills through the use of multilevel descriptive rubrics. The assessment rubrics must address specific criteria and have descriptors that allow candidates to monitor their own performance.

Assessing learning through dispositions. Dispositions are defined as the roots of behavior or a tendency to act in a particular manner. To ensure that teacher candidates enter the profession with values and attitudes essential to success in the public school classroom, colleges of education have the responsibility to encourage the development of such values and attitudes and to attempt to measure the degree to which their candidates have adopted them. Most colleges of education identify and develop a set of dispositions related to their expectations for teaching. The faculty, through discussion and research, determine for themselves what is most important

for their candidates' success in teaching. These regularly include such values as honesty, personal integrity, responsibility, hard work, and tolerance. Even in cases where agreement about which values and attitudes are necessary for successful teaching exists among education faculty members, measurement is problematic.

Assessment strategies for measuring dispositions include, but are not limited to, written responses to a prompt that is measured against an established rubric and the use of observation criteria. Best practice in assessment of a written response requires a rubric with descriptors at differing levels of agreement. A rubric of this type supports internal reliability of measurement and provides useful feedback to candidates. Observation forms are also sometimes used to measure candidates' dispositions. Unfortunately, both methods are susceptible to reliability problems. Whenever candidates are aware they are being evaluated, they tend to respond in ways they believe are expected. One other caution includes candidate feedback toward disposition. In certain circumstances, it may be inappropriate (if not illegal) to tell a candidate that (s)he has an inappropriate disposition. Feedback should be provided in a reflective manner that allows candidates to determine what their responses may or may not mean for the profession.

Assessing learning through the field experience. Preparation for candidates would be lost if not for the opportunity to apply their learning to real-world experiences. For teacher education candidates, assessments in real-world settings occur during coursework and throughout student teaching or internships. Candidates are given teaching assignments aligned with their teaching majors. To provide guidance and support, each candidate is assigned a cooperating (mentor) teacher and a supervisor from the university. Where possible, the university supervisor assigned to candidates has experience teaching in similar contexts and content areas. For example, a candidate in a secondary mathematics program should have a supervisor who is a former high school mathematics teacher. Assessments for field experience identify competence in content and pedagogical knowledge, communication, ability to plan appropriate lessons, purposeful reflection, and skills developed. The knowledge, skills, and abilities are measured consistently throughout the candidate's program. Common assessment forms and rubrics are used to measure the performance of all education majors, regardless of subject or grade level. However, as standards boards often require more specialized forms of assessment, many colleges have created custom rubrics and user guides that associate common assessment criteria to national and state content standards. To ensure the validity of the measure, the college of education provides formal training in the use of these guides and rubrics for all persons who participate in the evaluation of student performance during field experiences.

Teacher Education Summary

Many different but overlapping teacher preparation programs function within colleges of education. Each program has its own outcomes, standards, and assessments—some of which are common to other programs and some of which are unique. As a result, enormous amounts of data are generated, thus making storage, retrieval, and analysis complex. Importantly, the use of

computer software to keep track of data and to generate reports makes it feasible to support continuous assessment of student learning. The best software programs automatically create rubrics that are tied to standards from multiple national and state agencies. These rubrics are then associated with assignments in courses and field experiences in which candidates must demonstrate the knowledge, skills, and dispositions expected by colleges and by licensure and accrediting agencies. Because of the capability and flexibility of such systems, it is possible to administer the same assessment to different candidates who are enrolled in different programs or in the same course. After the data are collected, the data can be disaggregated by content area, grade level, standard body, classification (undergraduate vs. post-baccalaureate), or any other variable of interest. These data can be analyzed by the faculty members responsible for program improvement, curriculum adjustment/alignment, and instructional modification (Keil, 2008), all of which are designed to improve student learning.

Historically, assessment in education has focused primarily on snapshots in time to craft changes in curriculum, instruction, and policy. Today, availability of longitudinal data increasingly supports a continuous learning cycle for programs in teacher education. Strategic tracking of data from several assessments over time, while constantly monitoring improvement and then using these data to support changes, is becoming the norm. In addition, many states are applying a similar model to determine the impact of colleges of education on the success of K-12 students. These types of assessment programs require complex data retrieval and analysis systems and will revolutionize the way educational institutions assess their students and themselves (Cochran-Smith, 2003).

Conclusion

Biglan's research-based approach to categorizing disciplines has stood the test of time. Furthermore, verification of Biglan's model by a variety of researchers confirms that the disciplines are quite disparate. This in turn provides the opportunity for researchers to observe disparate assessment subcultures and to observe how disparate applied disciplines can align program assessment with student outcomes assessment in order to improve student learning. While one chapter cannot possibly cover all assessment strategies for the applied disciplines, one can extrapolate at least some lessons from health care and teacher education and their use of multiple data collection points (e.g., in-course assessments, field experiments, student teaching, simulations, clinical assessments, and external assessments). The lessons learned from these strategies can be used by other applied disciplines to gain deeper insights into how to effectively bridge from program assessment to student learning assessment. In fact, the applied fields have advantages over those labeled as "Pure" in that the expectations for performance tend to be clearly stated through both internal and external agents. The internal assessment of students' learning is often confirmed by external licensing requirements. The assessment of student learning in both "Pure" and "Applied" categories will, nevertheless, remain challenging as the

disciplines continually evolve over time in response to changing perspectives of students, faculty members, and the public on what constitutes student success.

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Indirect Evidence of Learning from a Campus Perspective

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The use of studies based on indirect assessment methodologies in higher education is widespread. However, the full potential of these studies for the assessment of student success is frequently underestimated, in part because of a lack of understanding and appropriate perspective on the application of these methodologies. This chapter addresses this problem by providing an overview of the essential nature of indirect assessment, including reasons for using indirect assessment, the methodological issues encountered when using indirect assessment, and the types of indirect evidence available for assessment of student success. Examples of successful use of indirect assessment methodologies are then described using examples of studies based on survey data from incoming freshman, the first-year experience, and graduating seniors. The use of indirect evidence for predicting retention and the use of alumni surveys and exit surveys for better understanding attrition are discussed.

The Nature of Indirect Assessment

Understanding the nature of indirect assessment requires knowledge of two different types of assessment measures: direct and indirect. The former type measures what students have learned and is closely associated with a *summative* approach to assessment. The latter type assesses the process whereby students learn; it is more closely associated with *formative* assessment. Indirect techniques are designed to report about learning rather than to directly demonstrate learning (Allen, 2004). When used to supplement direct measures, indirect indicators provide a richer depth of information that illuminates aspects of what the direct measures reveal about students' academic achievement (Morante, 2003).

Reasons for Using Indirect Assessment

Researchers have identified multiple reasons for using indirect indicators of student learning (Ewell & Jones, l993). First, while direct assessment measures document what has been achieved and where deficiencies exist, they often provide little direction regarding what can or should be done to remedy the deficiencies. In contrast, indirect indicators can provide critical information with which to interpret the results of direct assessment, and if designed properly, they can identify successful instructional practices and provide clear policy leverage for action. Second, indirect techniques offer a means of soliciting advice from important stakeholders through

interviews or focus groups to better understand why students are not mastering learning objectives and developing a response (Allen, 2004). Third, indirect measures are well suited to providing insight into the learning environment in order to improve the learning process. Indirect methods can help in evaluating the effectiveness of various pedagogical approaches, including lectures, readings, assignments, and homework (Terry, et al., 2007).

There are limitations when using indirect assessment methods. While indirect methods potentially enhance understanding of how and why learning occurs, results from indirect methods may be difficult to interpret and may lack public credibility (Ewell & Jones, l991). Perhaps the most important limitation of indirect assessment methods is that they do not evaluate student learning per se and therefore should not be the only means of assessing outcomes (Middle States, 2003). More than one measure is often needed to make informed decisions about the learning process and environment.

Methodological Issues in Indirect Assessment

In designing a program for assessing student learning, one needs to consider a number of methodological issues. First, a decision must be made concerning why the assessment is being done and whether the assessment should be summative or formative or a combination of the two approaches. Summative evaluation emphasizes outcomes, and formative evaluation focuses primarily on program improvement. While many accreditation standards reflect a summative approach to assessment, research indicates that a formative approach may be more likely to lead to success in the assessment effort (Peterson & Einarson, 2001). In fact, Yorke (2003) offers an intellectually convincing case for the use of a formative approach in assessment, noting that formative assessment should be viewed as a collaborative act between teacher and student designed to enhance the capability of the student to the fullest extent possible. In such cases, indirect assessment methods are ideally suited to a formative approach for evaluating and improving the effectiveness of educational programs.

A second important methodological issue in assessment of student learning is whether to use quantitative or qualitative research methodologies. Researchers can choose from several qualitative methods to assess student learning: observation, open-ended interviewing, focus group discussion, and document analysis to complement the data obtained through quantitative research. As noted, qualitative data can enhance the meaning and impact of quantitative results. Trosset (2007, p. 21) notes that qualitative data “enrich a report and help readers understand what is going on. They can increase the effectiveness of applied researchers by making a situation feel real to the decision-maker” for whom the research is targeted. Scholars in the assessment field propose that qualitative approaches may offer a deeper understanding than could be obtained with quantitative methods alone:

> While there may still be a preference for quantitative expertise in institutional research, we believe long-standing norms are changing as it becomes more apparent that important questions cannot be answered with a single approach.

> The best decisions are based on a deeper understanding than quantitative methods alone can provide. (Van Note Chism & Banta, 2007, p. 15)

A third issue is that effective use of indirect measures and qualitative research requires that researchers develop appropriate skills. For example, if using interview techniques, Trosset (2007) conceptualizes these skills as falling in three dimensions: intellectual, emotional, and creative. Intellectual skills are necessary for designing primary and follow-up questions and for recognizing the complexities or implications of what is being said. Emotional skills are important for creating the right atmosphere and establishing good rapport. Creativity is critical to being able to perceive unanticipated data or a new idea that should be pursued during an interview.

The most challenging methodological issue concerns the use of self-reported data. Indirect assessment methods often measure perceptions about learning that are based on self-reported data. Problematic aspects of self-reported data include the subjective nature of the data, the influence of social desirability, a low correlation with objective measures, and a lack of baseline data for assessing gains. Fortunately, several scholars have offered observations and guidelines regarding the use of self-reported data. For example, Pace (1984) notes that self-reported data are most likely to be accurate when certain conditions are met:

> In general the accuracy of answers depends on the clarity of the questions, on whether the respondents have a good base in experiences for answering the questions, on whether the form in which the answers are to be given is appropriate, and on whether the respondents regard the questions themselves as meriting a serious and thoughtful response. (p. 35)

In spite of the potential problems with using self-report data, scholars have argued that many of the goals of higher education—such as positive student outcomes related to attitudes, values, and social and practical competence—cannot be measured by objective measures such as achievement tests (Kuh, Pace, & Vesper, l997). Gonyea (2005) highlights the merits of using self-reported data, including greater scope than standardized tests and a more practical and economical source of certain types of information that may not be easily obtained by other methods. He also recommends specific strategies for the appropriate use of self-report data. Among his recommendations are the following: verification with school records, the use of multiple sources or triangulation, asking survey writing and design experts to review questionnaires for soundness and clarity, addressing the possibility of social desirability, using care with self-reported outcomes as substitutes for objective tests, getting baseline data on self-report measures, and addressing the possibility of halo error and minimizing such effects when possible.

Pike (1996) proposes that self-report data should be viewed as complementary to test performance data, but not as a substitute for it. He encourages multiple assessment strategies. There appears to be general agreement that assessment studies of student learning may be most effective when both qualitative and quantitative methods are employed. In fact, Borland (2001)

argues that the most useful research typically results from appropriately applying both methodologies to create knowledge in support of decision making.

Types of Indirect Evidence

Ewell and Jones (l993) offer a conceptual framework for classifying types of indirect indicators for assessment. The categories are: (a) institutional requirements, (b) instructional good practice, and (c) student behavior and self-reported gains. Institutional requirements include proficiencies, types of experiences required, and capstone experiences. Measures of instructional good practice involve typical class sizes, instructional experiences, and such institutional policies as the proportion of undergraduate classes taught by full-time faculty. Student behavior and self-reported gains encompass entering test scores, use of time, self-reported growth and reaction to college-level work, length of time to degree, transfer data, retention statistics, job placement data, and student, alumni, and employer surveys.

Each type of indirect measure has certain strengths but also certain limitations. For example, surveys may be one of the most frequently used methods for indirect assessment. While surveys can easily assess views of various stakeholders, what people say they do or know may differ from what they actually do or know. Similarly, interviews can provide insight into the reasons for participants' responses. However, conducting interviews can be time consuming and expensive. While focus groups can provide in-depth exploration of issues, success requires a skilled, unbiased facilitator (Allen, 2004).

Uses of Indirect Evidence in Assessing Student Success

Indirect measures and methods may be used to assess various aspects of student success, including perceived intellectual growth, academic progress, personal and social development, character development and civic engagement, and global awareness. Inventories and surveys represent the most common approach used for these types of assessments. For example, as part of the DePaul University Values Project, Filkins and Ferrari (2003) administer an internally designed survey through which students report their perceptions of the institution's core mission and values. In contrast, Kuh (1998) uses data from the College Student Experiences Questionnaire (CSEQ) to assess the effects of values-centered institutions. Other data are available from various external sources, including self-reported student data from the Higher Education Research Institute.

This section provides examples of past studies conducted by this chapter's author that illustrate how institutions can use indirect evidence to better understand student satisfaction, learning, growth, and success. The rationale for using multiple studies from a single institution is that this demonstrates the richness of the information that evolves over time when systematically using indirect assessment methodologies to better understand student success. Results from the studies show how indirect and direct evidence combine to inform efforts at the program and

policy levels. The belief is that indirect evidence can be used to craft interventions that will support institutional initiatives that are working and that can correct problems identified as barriers to student success.

In addition to institutional data, the studies use data from the Cooperative Institutional Research Program survey (CIRP) and from the Your First College Year (YFCY) survey, both produced by the Higher Education Research Institute (HERI). CIRP is a national longitudinal survey of first-time, full-time freshmen in the United States. It has been administered for more than 40 years. Respondents provide information on various topics, including reasons for attending college; reasons for choosing this particular college; self-ratings of abilities, goals, and values; expectations of the college experience; career plans; and aspirations. Researchers can access the data from this survey to create individual class profiles, conduct trend studies of changes in the freshman population, and perform segmentation analyses by student characteristics, including gender and citizenship.

Your First College Year (YFCY) survey is designed to address the need for research on the first-year experience. The survey is administered at the end of the first year and addresses several aspects of students' experience, including perceived growth; level of academic adjustment; and satisfaction with the academic program, student services, and overall college experience. Individual responses from the YFCY can be linked to CIRP survey responses. The merged data provide a basis for monitoring success in student growth and assessing changes in student characteristics, values, and goals during the first year.

The examples of using indirect evidence in assessment focus heavily on the first-year experience. These studies are important in planning and policy making, especially given that extensive research has established the impact of first-year experiences on a range of outcomes, including student academic success, intellectual growth, retention, and satisfaction with college (Coffman & Gilligan, 2002-2003; Horn, 1998; and Pascarella & Terenzini, l991). Gerken and Volkwein (2000) report that the strongest predictors of 11 out of 12 college outcomes are the vitality of student interaction with faculty and with each other during the freshman year. Upcraft, Gardner, and Barefoot (2005) note that while the last two decades have witnessed increased efforts to improve the first year of college, many challenges remain—including low first-year academic success rates, a less challenging academic experience than students expect, and inadequate attention to enhancing student learning in the first year. Continued monitoring and assessment are clearly needed to ensure that first-year experience programs realize the potential for success.

The following examples describe efforts to implement the continued monitoring and assessment of student satisfaction during the first year. Other examples show use of indirect evidence to assess diversity and to collect relevant information from graduating seniors. Five studies are described. Two utilize primarily CIRP data for longitudinal and comparative assessments; two studies utilize indirect evidence from first-year data, including YFCY data; and one focuses on using indirect evidence from a graduating senior survey.

Study 1: Assessing Trends in Freshmen's Perceived Abilities, Goals, and Expectations of College

In an indirect assessment report for institutional accreditation, CIRP survey trend data were used to explore trends in freshmen's perceived abilities, goals, and expectations of college (Delaney, 2006). Results reveal that entering freshmen consistently rate themselves highly on several achievement characteristics: drive to achieve, leadership, competitiveness, and academic ability. They also rate themselves highly on mathematical ability, understanding of self and others, and intellectual self-confidence. In contrast, incoming freshmen rate themselves much lower on writing, public speaking, spirituality, and artistic abilities. The highly rated abilities portrayed typical freshmen as achievement oriented, competitive, and confident, while the lower rated abilities provided baseline data for evaluating the impact of the curriculum on student abilities.

With regard to the importance of various life goals, freshmen consistently rate four goals especially highly: being very well off financially, being successful in their own business, becoming an authority in their field, and raising a family. In contrast, they rate several art and community action goals much lower, including participating in community action, taking part in environmental cleanup, and writing original works. These results identify areas for concentration in undergraduate curricular and co-curricular programs.

Response strategies. The recommendation is to use results from this study as a baseline to track the institution's success in enhancing students' abilities and in meeting students' expectations for achieving important life goals during college.

Study 2: Enhancing Support for Student Diversity Through Research

CIRP trend data are used to explore student diversity and to identify similarities and differences between U.S. citizen and non-citizen subgroups (Delaney, 2002). The ultimate goal of this study is to support the design of programs that can successfully encourage integration of international and domestic students by fostering appreciation of common bonds and respect for differences. The major research questions addressed are:

- How do international and domestic freshmen differ with respect to academic quality, interests and activities, perception of abilities, reasons for going to college, expectations for the future, and life goals?
- What are the policy and program planning implications of these differences for admissions, marketing, academic management, and student affairs?

Results identify a lack of language proficiency and differences in culture, values, and goals as potential obstacles to integration between international and domestic students. The SAT verbal score of international students is significantly lower than that of domestic students, suggesting inadequate proficiency with a new language. International students also express different interests, goals, and values when compared with domestic students. They report spending more time reading, studying, praying or meditating, and conversing with their teachers,

whereas domestic students report spending significantly more time working for pay, exercising or playing sports, and socializing with friends. International students express greater interest in various social, philosophical, and artistic goals, including developing a philosophy of life, helping others, and achieving in a performing art. Students also differ in their reasons for attending college. Domestic students attribute more importance to getting a better job and making more money, while international students place more importance on gaining a general education and meeting their parents' wishes.

Response strategies. Results from this study are translated into the following types of strategic policy recommendations as a guide for achieving success in integrating international and domestic students:

- Design programs to identify and serve international students in need of language support.
- Offer seminars and discussion groups on culture and values for international and domestic students to learn about each other's cultural values.
- Develop social programs, featuring different international cultures, so that international students feel welcome and domestic students learn to appreciate their values and customs.
- Continue to monitor international student trends and examine the extent to which international and domestic students interact and enrich each other's lives.

This comparative study illustrates how the CIRP data may be used to enhance understanding and to foster appreciation of differences among subgroups in incoming freshman populations. If cross-cultural understanding is valued by the institution, then CIRP data can be successfully used over time to assess whether student outcomes reflect this value.

Study 3: Exploring Student Characteristics, Overall Satisfaction, and the First-Year Experience

To explore students' overall satisfaction with the first year, Delaney (2004a) used regression to analyze student characteristics and overall satisfaction with the students' first-year experience. Results of her study reveal that satisfaction with sense of community, success in developing close friendships, satisfaction with campus resources, satisfaction with the quality and relevance of courses, and participation in student clubs are statistically significant predictors of overall satisfaction. These variables explain 53% of the variance in students' overall satisfaction with the first year. Consistent with previous research, this study confirms the importance of social integration to student satisfaction with college. Three of five significant predictors of overall satisfaction with the first year involved social relationships—satisfaction with sense of community among students, success in developing close friendships, and participation in student clubs.

Study 4: Exploring Faculty–Student Interaction

In a study designed to explore faculty and student interactions in the first-year experience, regression results on analysis of YFCY data reveal that, after controlling for academic characteristics at entrance and academic adjustment and commitment to study in the first year of college, interaction with faculty significantly predicts students' first-year cumulative average grade (Delaney, 2008c). The regression analysis also reveals that, after controlling for academic adjustment, satisfaction with a sense of community among students, and success in developing close friendships, satisfaction with the amount of contact with faculty significantly predicts students' overall satisfaction. Results from this study indicate that promoting increased interaction with faculty may be one of the most effective ways to meet the major challenges associated with the first year of college. The following recommendations were designed to encourage such interaction:

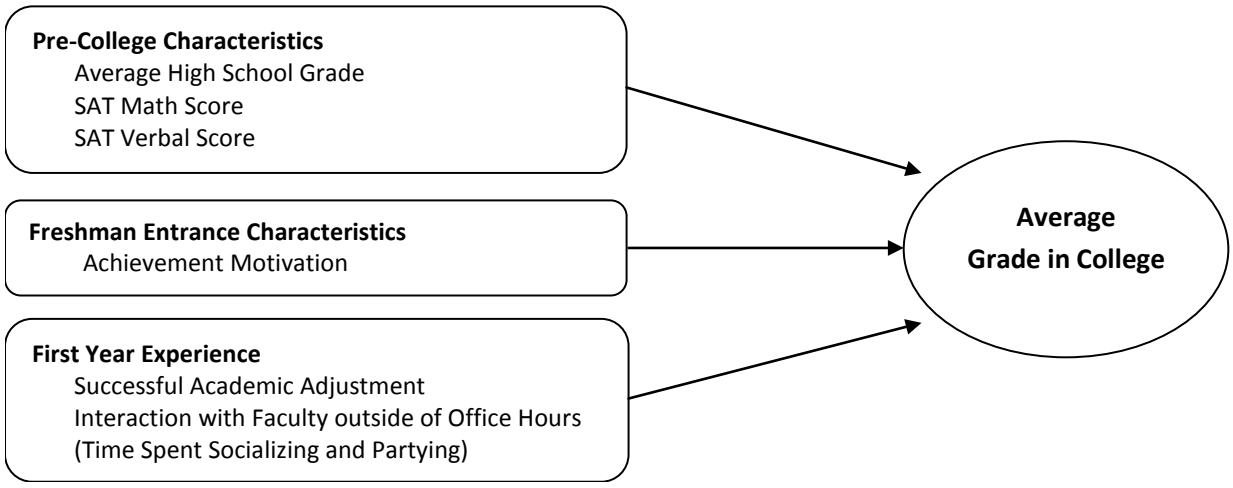
- Recruit and offer incentives for volunteer faculty to serve as first-year student advisors.
- Establish small weekly seminars with faculty serving as chairs to lead discussions with first-year students on academic adjustment in the first year of college.
- Create informal social opportunities for students to get to know faculty.
- Create research assistantships for students to work closely with faculty.

After controlling for average high school grade, SAT math and verbal scores, and achievement motivation, Delaney (2008a) found that three first-year experiences significantly predict average college grade. They are successful academic adjustment, interaction with faculty outside of office hours, and time socializing and partying. The strongest positive predictor is successful academic adjustment followed by interaction with faculty outside of office hours. Time spent socializing and partying is a negative predictor of college grades. Those who spend more time socializing and partying in the first year earn lower average college grades. Figure 1 presents a graphic model of the predictors of average college grades.

Response strategies. Results from this study were translated into the following recommendations designed to enhance the first-year experience for future freshman classes:

- Focus on successful academic adjustment to college in freshman seminar programs.
- Encourage freshmen to interact with faculty outside of office hours.
- Create informal social opportunities for students to get to know faculty.
- Give priority attention to developing a sense of community among students.

Figure 1. Predicting Students' Average Grade in College



Study 5: Enhancing Student Success Using Graduating Senior Surveys

While data on freshmen provide information on the early college experience, graduating seniors can provide valuable insights for institutions on how they can increase the likelihood that the entering student will persist to graduation. A survey of graduating seniors provides an ideal example of obtaining indirect evidence of student learning and growth during the college experience. By focusing on assessment in the design phase, researchers can enhance the relevance of senior survey research to institutional assessment. The following information is from the article "Expanding Students' Voice in Assessment through Senior Survey Research" (Delaney, 2005). It provides an example of assessment-focused senior survey research based on trend data for 970 graduating seniors. The research demonstrates how the link between research and policy can be achieved through the conceptual organization, design, and statistical analyses of results. The study is based on a model that involves the following steps:

- Review the institutional mission.
- Identify the goals of the undergraduate academic program.
- Define the major components of the undergraduate student-life experience.
- Develop a means to evaluate academic achievement and satisfaction with student life.
- Design a statistical analysis plan to address planning and policy issues.
- Translate the results into recommendations for planning and policy development.

The multiple regression analysis employed in this study illustrates how the data can be used to identify significant predictors of graduating seniors' overall satisfaction and to simulate how improvements in specific areas can potentially increase success in students' overall satisfaction with college. As shown in Table 1, the strongest predictor of overall satisfaction is

perceived gain in in-depth knowledge of a field. Next in order are satisfaction with the quality of business courses and faculty attitudes. In addition to satisfaction with career services, other significant predictors include the perception of enhanced ability to acquire new skills and knowledge, understanding of moral/ethical issues, and thinking analytically. The model explains 25% of the variance in overall satisfaction.

Results from the regression can be employed to simulate how improvements in specific areas would affect overall satisfaction with the college experience. Since most of the original predictor mean ratings in this data set are high, the means for three independent variables—perceived gain in in-depth knowledge, enhanced understanding of moral and ethical issues, and satisfaction with career services—are increased to 3.50. The value 3.50 represents the midpoint between 3 *moderately* and 4 *greatly* for the first two variables and 3.50 represents the midpoint between 3 *generally satisfied* and 4 *very satisfied* for the third variable, satisfaction with career services.

Table 1. Multiple Regression Results: Predicting Graduates' Overall Satisfaction

Variables	Beta Coefficient	t Ratio	R^2	F Ratio
Demographic Variables				
Gender	.056	1.802		
Citizenship	.003	0.107		
Assessment and Satisfaction Variables				
Gained in-depth knowledge	.212	5.815***		
Satisfaction with business courses	.139	3.965***		
Satisfaction with faculty attitude	.107	3.208***		
Enhanced ability to acquire new knowledge	.097	2.652**		
Enhanced understanding of ethical issues	.093	2.764**		
Enhanced ability to think analytically	.077	2.006*		
Satisfaction with career services	.065	2.002*		
			.250	29.423***

* $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

The simulation results presented in Table 2 show two sets of means, original and revised, for the independent variables and the resulting increase in the dependent variable. The original means are based on the actual data. Each unweighted mean is multiplied by the unstandardized B coefficient to produce the weighted mean. For example, the 3.32 for gained in-depth knowledge is multiplied by the B coefficient of .203 to produce a weighted mean of .674. The weighted

means, with the intercept, are used to compute the regression equation, resulting in a mean of 3.18 for overall satisfaction.

The revised column means (shown in bold) represent the simulated increases from 3.32 to 3.50 for gaining in-depth knowledge, from 2.59 to 3.50 for enhanced understanding of ethical issues, and from 2.93 to 3.50 for satisfaction with career services. The revised unweighted mean of 3.50 for gaining in-depth knowledge is multiplied by the unstandardized B coefficient of .203 to produce a weighted mean of .711. As shown, increasing the means for gaining in-depth knowledge, enhanced understanding of ethical issues, and satisfaction with career services increases the overall mean satisfaction rating from 3.18 to 3.33.

This study illustrates how statistical procedures were used to simulate the effects of specific improvements on overall satisfaction. This information can be used to inform decisions regarding the allocation of resources to areas that will allow the greatest impact on satisfaction.

Table 2. Simulation Results: Effect of Selected Increases in Assessment and Satisfaction on Overall Satisfaction

		Means			
	Unstandardized	Original		Revised	
Predictor	B Coefficient	Unweighted	Weighted	Unweighted	Weighted
Constant	.298				
Gained in-depth knowledge	.203	3.32	.674	**3.50**	.711
Satisfaction w/ quality of business courses	.184	3.67	.676	3.67	.676
Satisfaction with faculty attitude	.126	3.42	.431	3.42	.431
Enhanced ability to acquire new knowledge	.099	3.39	.336	3.39	.336
Enhanced understanding of ethical issues	.076	2.59	.197	**3.50**	.266
Enhanced ability to think analytically	.078	3.34	.261	3.34	.261
Satisfaction with career services	.063	2.93	.185	**3.50**	.221
Dependent Variable					
Overall Satisfaction			3.06		3.20

Predicting Academic Success, Retention, Graduation, and Attrition

In recent years, the importance placed on indirect evidence of student satisfaction has grown in importance as educational institutions and policy makers have highlighted the importance of student retention and graduation as indicators of accountability and quality. This has occurred

simultaneously with the development of longitudinal databases that make possible the longitudinal study of student cohorts. Furthermore, indirect evidence from survey data for entering freshman classes provides a means of assessing the impact of student characteristics, admission criteria, and college experiences on student academic success and retention over time. While an institution's administrative database provides the primary data for a longitudinal retention study, the research is significantly enhanced if administrative and institutional data can be merged with student survey data. Delaney (2008c) provides a model in which this type of merger yields rich information for educational planning for selection of students for business studies, but it is relevant to a study of any discipline. The next section describes this research in some detail.

In this study, data from the institution's undergraduate admission, financial aid, and registrar administrative system files were merged with senior and freshman survey data. Major research questions addressed were: How successful are admission policies in predicting academic performance and graduation? Controlling for input characteristics, how well do college experiences predict academic performance and satisfaction? Discriminant analysis was employed to predict graduation status, and regression analyses were conducted to predict academic performance and satisfaction. Highlights from the results illustrate the value of the model and the relevance of the variables to institutional assessment.

Predicting Graduation

Results from discriminant analysis, presented in Table 3, reveal that first semester grade point average, admission rating, and average high school grade are positively correlated with the discriminant function. Students with higher scores on these variables are more likely to graduate. In contrast, students who highly value developing a meaningful philosophy of life, influencing the political structure and social values, and becoming a community leader are less likely to graduate. The canonical correlation of .44 indicates that these variables explain 19% of the variance in graduation status.

Predicting Academic Success

Table 4 presents results from a regression analysis that includes demographic variables, entrance characteristics, and college experience variables. The Philosophical/Community Values variable is a scale that represents the mean rating on the importance of the following goals: developing a meaningful philosophy of life, promoting racial understanding, taking part in community action, and being involved in environmental cleanup.

Table 3. Discriminant Analysis Results: Predicting Graduation

Predictors	Structure Coefficient	Percent Correctly Classified
		92.3
First Semester Grade Point Average	.72	
Admission Rating	.37	
Average High School Grade	.35	
Importance of:		
Developing Philosophy of Life	-.45	
Influencing Political Structure	-.43	
Influencing Social Values	-.39	
Becoming a Community Leader	-.37	
Canonical Correlation	.44	X^2 = 59.33; df = 8; p ? .001

Table 4. Multiple Regression Results: Predicting Final Grade Point Average

Predictors	Beta Coefficient	t Ratio	R2	F Ratio
Demographic Variables				
Gender	.00	.01		
Citizenship	.04	1.12		
Entrance Characteristics				
Average High School Grade	.19	4.47***		
Philosophical/Community Values	-.09	-2.29*		
College Experience Variables				
First Semester Grade Point Average	.72	17.05***		
Satisfaction with Academic Advising	.12	3.02**	.71	79.84***

* $p < .05$; ** $p \leq .01$; *** $p \leq .001$

As shown in Table 4, neither of the demographic variables is a significant predictor of final grade point average. Of the two entering characteristics, average high school grade is a significant positive predictor, while the philosophical/community value scale is a significant negative predictor. With regard to the college experiences, the first semester cumulative average and satisfaction with academic advising significantly predict final grade point average. The R^2 of .71 indicates that these variables explained 71% of the variance in final average grades.

Predicting Overall Satisfaction

Table 5 presents results from the regression analysis predicting seniors' overall satisfaction. As shown, citizenship is a significant negative predictor, indicating that domestic students are more satisfied than international students. Three entrance characteristics significantly predict overall satisfaction: identifying the college as the first choice, citing size of college as important, and reporting higher self-ratings on writing ability. With regard to college experience variables, students who perceive a greater impact of their education on their intellectual self-confidence and who express a higher level of satisfaction with faculty attitude, the quality of business instruction, and sense of community are also more likely to be satisfied. As indicated by the R^2 of .33, these variables explain 33% of the variance in graduating seniors' overall satisfaction.

Results from this study bear important implications for policy and planning. The significant relationship found between first-year, fall-semester college grades and retention implies the need to monitor students' academic performance and to provide academic support during the first semester of the freshman year. The identification of the admission rating and self-reported high school grade as significant positive predictors of graduation confirms the importance of these factors during the admission process in the selection of students who are likely to be retained.

Results of the regression analysis identify average high school grades, first semester college grades, and satisfaction with academic advising as significant positive predictors and philosophical/ community values as a negative predictor of final grade point average. These findings establish the relevance of high school grades as a potential indicator of academic success, and imply that the college should promote philosophical/community values in the curriculum, monitor first-semester grades, and improve advising to promote academic success. Results also reveal that seniors who perceive a greater impact on their intellectual self-confidence and who are more satisfied with business courses, faculty attitude, and sense of community express higher overall satisfaction.

Table 5. Multiple Regression Results: Predicting Overall Satisfaction

Predictors	Beta Coefficient	t Ratio	R2	F Ratio
Demographic Variables				
Gender	.12	1.90		
Citizenship	-.13	-2.06*		
Entrance Characteristics				
College First Choice	.14	2.19*		
Size of College Important	.14	2.27*		
Writing Ability	.18	2.97**		
College Experiences				
Perceived Impact on Intellectual Self-Confidence	.22	3.23***		
Satisfaction with:				
Faculty Attitude	.15	2.36*		
Quality of Business Instruction	.14	2.10*		
Sense of Community	.13	1.99*	.33	10.35***

* $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$

Response Strategies

Based on the findings, the following types of policy recommendations were presented to further enhance success in retention, academic performance, and satisfaction with college:

- Continue giving priority emphasis to the admission rating in acceptance decisions, as it was an excellent predictor of graduation status and academic performance in college.
- Closely monitor freshmen's academic performance in the first semester. It was the strongest predictor of graduation status and final grade point average.
- Maintain and enhance student satisfaction with faculty, the quality of business instruction, and sense of community. These were significant predictors of overall satisfaction.

Following Up with Exit Surveys and Alumni Surveys

Identifying every available approach to effective use of indirect evidence is beyond the scope of this paper. However, in addition to identifying predictors of academic success and retention, it is also important to recognize the use of indirect evidence to understand attrition. For example, two types of surveys, an exit survey and an early leaver survey, can be used to understand why students withdraw before graduation. Institutions may require an exit survey for students who apply for a leave of absence. Such a survey may ask students why they are leaving, what their intended plans are, and how probable it is they will return to campus in the future (Porter, 2003). While it may be more difficult to attain a high response rate for it, an early leaver student survey is potentially helpful in understanding why students simply drop out of an institution before graduation. Such surveys may ask withdrawn students to indicate the extent to which various personal, financial, and academic or institutional issues contributed to their decision to leave the institution before graduation.

Use of exit surveys has proven useful for planning and policy making. For example, in his study on the reasons for first-year undergraduate withdrawal, Harrison (2006) found that most students explain their decision in terms of having made the wrong choice when choosing courses. They also cite personal/social reasons, difficulty settling into college, and financial difficulty. Similarly, Christie, Munro, and Fisher (2004) found that a set of interconnected factors, including poor choice of courses, limited social support network, lack of fit between the student and the institution, and financial difficulties, contributes to student withdrawal.

Scholars have also shown that listening to the voice of alumni contributes to good planning and policy making. Alumni surveys are generally designed to accomplish several goals relevant to assessment, including to elicit graduates' evaluation of their education, to determine the effectiveness of career preparation, and to document alumni satisfaction. Cabrera, Weerts, and Zulick (2005) note that in the past twenty years, colleges have increasingly used alumni surveys as an important tool for assessing the impact of the collegiate experience on student cognitive and noncognitive development.

At the methodological level, Volkwein (2009) highlights the unique value of alumni studies, identifies relevant outcomes to be addressed in alumni surveys, and offers guidelines for coping with the typical challenges and problems encountered in conducting alumni studies. He contends that evaluative statements from alumni have legitimacy with both internal and external stakeholders. Internally, alumni studies can assess important outcomes regarding enhancing curricula, support programs, and administrative policy. Externally, alumni studies can support accreditation, accountability, recruitment, and fundraising. The challenge is that attaining a high response rate is one of the major challenges involved in conducting an alumni survey. Porter (2004) offers a comprehensive, research-based discussion of several techniques designed to raise response rates, including having a recognized authority request participation in a survey, using multiple contacts with members of the sample, offering incentives to complete the survey with

the survey instrument, controlling the length of the survey, and framing the survey request in terms of asking for help.

In a study of alumni from an undergraduate program, Delaney (2004b) reflects specifically on the goals of the undergraduate curriculum and alumni evaluation of their education. Several criteria are considered: assessment of abilities and knowledge enhanced, satisfaction with college experiences, perceived college impact on personal and professional development, preparation for personal and professional life, and overall evaluation of the undergraduate experience. She reports that satisfaction with a sense of community; satisfaction with preparation for one's future career; and the perception of enhanced abilities to acquire new knowledge, communicate well orally, and understand others are significant predictors of graduates' overall satisfaction. These results indicate that graduates evaluate their education through the prism of different aspects of their experience: the quality of community life during college, the adequacy of professional career preparation, and enhanced capacity for lifelong learning and relating with others. The study also identified satisfaction with social life, enhanced drive to achieve, improved ability to acquire new knowledge, and increased gains in in-depth knowledge as significant predictors of graduates' willingness to recommend the college to a high school senior. These findings reveal that graduates consider social, academic, career, and life enrichment aspects of their experience in deciding whether to recommend their college.

In an earlier study that focused specifically on a highly innovative master's of business administration (MBA) program, Delaney (2000) found that alumni highly rated the program's emphasis on teamwork and on preparing students to think in real-life situations and to function in multiple national and cultural settings. However, alumni recommended more emphasis on traditional, functional skills; more balance between group work and individual work; and an increase in the program's areas of specialization.

This research illustrates how alumni can provide an informed and balanced perspective in the assessment process by identifying what traditional values to retain and what innovative changes to implement in order to achieve success in preparing graduates for changing professional and labor market realities.

Conclusion

This chapter highlights critical issues related to indirect assessment and identifies strategies institutional researchers can use to enhance the relevance of their work to the assessment of student learning and growth in higher education. A primary thesis of the chapter is that by developing an understanding of the nature and rationale for using indirect assessment and by acquiring knowledge of relevant methodological issues, researchers can successfully complement direct assessment efforts to better understand student satisfaction. The chapter illustrates how a focus on assessment in the design and analysis phases can transform incoming freshman research; first-year experience studies; senior survey findings; retention studies; and

alumni research into indirect evidence of students' intellectual, personal, and social development during college.

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Part 4

Case Studies: Specific Campus-Based Efforts to Support Student Success

In the previous sections, various aspects associated with student success have been discussed from a "global" perspective, with extensive literature reviews and analysis. In this section, case studies are presented in which representatives from an institution describe their efforts and outcomes in dealing with a specific issue that addressed a unique student population's success.

The authors used the following as a general guideline to structure their case study:

1. Short background of issue at your institution to include a description of the specific student population.
2. Why is this population important to your institution?
3. What is the institution doing (who, what, when, how, and where organizationally)?
4. What have been the outcomes/results of your efforts? In other words, how has what has been done impacted student success?
5. What does this mean for the institution and this population of students? What have you learned?

No two institutions are identical. What is a good solution in one institution is not guaranteed to work in another. It does seem, however, that these case studies would be good starting points for addressing similar needs and opportunities at other institutions. Also, as your colleagues have shared with you by contributing to this section, we hope you will consider sharing with them your experiences by writing a case study for this part of the *Sourcebook*.

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Serving Student Veterans at The University of Texas at San Antonio: Accomplishments and Challenges

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University of Texas at San Antonio

The city of San Antonio is known as "Military City, USA," and it was recently recognized by *G.I. Jobs* magazine (2013) as the most military-friendly city among 381 metropolitan cities in the United States. This rating was based on San Antonio's military-friendly employers and schools, the number of veteran-owned businesses, and its cost of living and unemployment rate. Recent U.S. Census Bureau (2011) data estimate that more than 180,000 veterans are living in the San Antonio metropolitan area. Active military members within San Antonio are comprised mostly of U.S. Army (Camp Bullis, Fort Sam Houston) and Air Force personnel (Lackland and Randolph Air Force bases). Veterans, active military, and their families are found in a variety of local businesses; are students in our schools, colleges, and universities; and are significant contributors to the social, cultural, and economic makeup of San Antonio. Given their presence in the city and its surrounding areas, it is critical that colleges and universities provide the kinds of support that will lead to the academic, social, and economic successes of these key individuals. Nonprofit higher education in San Antonio includes the Alamo Community College District, which provides two-year degrees and technical education and training, and four-year institutions, including four private institutions and two public institutions. Premier among the four-year higher education institutions in San Antonio supporting our military, veterans, and their families is The University of Texas at San Antonio (UTSA), due to the large and diverse subpopulations it serves and the quality of its services.

Founded by the Texas Legislature in 1969, UTSA is a Hispanic- and overall minority-serving institution classified by the Carnegie Foundation as a research university with high research activity. More than 30,000 students were enrolled as undergraduate, master's, and doctoral students in the fall semester of 2012 and matriculate at one of two campuses—the main campus, located in the suburban area of San Antonio, and the downtown campus, located in central/west San Antonio. Of the total student body, almost 62% are minority students, with more than 45% Hispanic (Office of Institutional Research, 2012). As part of a Texas state

initiative, UTSA is designated as an "Emerging Research" institution. As such, its goals include becoming a major research institution (referred to as "Tier One" status by the Texas legislature) (The University of Texas System, 2006).

In the fall of 2012, UTSA enrolled 1,284 veterans, 1,502 dependents of veterans, and 158 active duty military for a total of 2,944 receiving veteran educational benefits. Of the veterans, 51% were minorities, with 39% Hispanic and 10% Black; 78% were men. The dependent and active duty minority percentages are also high: 67% and 51% respectively (UTSA Institutional Research Office, 2013). UTSA's Veterans Certification Office (n.d.) states that "UTSA certifies more veterans and their family members utilizing their educational benefits than any other university in the state of Texas." UTSA certifies an average of 1,800 veterans per semester, and that number continues to climb. Beyond racial and ethnic diversity, it is also important to note that all students receiving veteran educational benefits at UTSA do come from a unique military culture, whether they served previously, are currently serving, or are from a military family. It is our desire to understand as much as we can about their way of life and culture so we can better support them in the pursuit of their education. Efforts to continuously improve the recruiting, retention, and matriculation of this population are critical to the success of the university. In addition, it should also be pointed out that UTSA is the proud home to two large, award-winning Army and Air Force ROTC detachments whose cadets are integrated into veteran events on campus.

Like other comprehensive institutions, UTSA provides an array of assistance to all students including a disability services office, a health services office, registrar's office, a financial aid office, and a veteran's certification office. Our interest in this report, however, is on those activities and services that are focused on meeting the specific needs of veterans on our campus. We believe that our efforts are exemplary and can serve as a model for many other institutions wishing to better serve this important subpopulation of students.

The Veteran Services Advisory Committee (VSAC) and the Student Veterans Association (SVA)

UTSA's commitment to exceeding typical veteran services began initially in 2009 with the formation of an ad hoc committee made up of staff and faculty, called the Veteran Task Force, which focused on developing better ways to serve our student veteran population. Although the group had the best intentions, its effectiveness was limited due to the informal nature of its relationship to established university organizational structure. As the veteran student population began to increase significantly, a change was needed in order to more successfully serve the growing numbers of student veterans at UTSA. In 2011 the group was reconfigured into the Veteran Services Advisory Committee (VSAC), a smaller, more focused, and formal presidential standing committee consisting of representatives from key departments across campus. While this group is key to our provision of service to veterans, it was important to us to maintain a connection to those who served on the original task force. Those individuals are now involved as

part of a larger Veteran General Interest Group (VGIG). The service of collaborators within the VGIG continues to support our many veteran initiatives and events on campus.

As noted above, the VSAC is a formal organizational unit, reporting to the president. Through the VSAC, key student veteran issues can be discussed and evaluated openly and thoroughly, resulting in the recommendation of creative solutions for implementation by UTSA leadership. The main focus of the VSAC is to assist veterans in making a seamless transition from military service to the UTSA community by providing a military-friendly campus environment that directs student veterans toward degree, certificate, or program completion.

The VSAC also recognizes the unique experiences that student veterans bring to the campus environment and includes the president of the Student Veterans Association (SVA) as one of its standing members. The SVA provides comprehensive information, support, networking, professional opportunities, academic support, and guidance to aid veterans and their families in their intellectual and professional pursuits at UTSA. Critical to achieving these ends, the SVA implemented a mentoring program, which pairs incoming student veterans with currently enrolled student veterans and is designed to develop a collaborative environment to aid in academic success. Often, incoming student veterans tend to have concerns that their nonveteran peers do not have. Consequently, teaming an incoming student veteran with an experienced student veteran mentor can facilitate a more successful collegiate experience.

Evaluation of Student Veteran Needs

The VSAC's efforts were informed by a needs assessment survey that was conducted from April 21, 2011, through May 21, 2011. A total of 1,672 UTSA student veterans or veteran dependents enrolled during this time period were e-mailed an invitation to participate, with approximately 13% responding. Although the response rate was low, data received, especially in the form of supplemental comments, have been validated by veterans on campus as they participate in or benefit from programming being developed. About 75% of the respondents indicated they were a veteran while about 15% indicated they were a military dependent. Of these, more than 90% were receiving GI Bill benefits. The Armed Forces breakdown of these students is similar to that of the greater San Antonio area—about 30% from the Air Force, 30% from the Army, and about 40% from the Navy and Marine Corps.

About 80% of the respondents indicated that they felt welcomed on campus by UTSA faculty, staff, and other students, and more than 60% were aware of other veteran students. In addition, approximately 75% felt that UTSA was a good choice for them. Interestingly, however, responses to open-ended questions included in the survey indicated that a significant number of our student veterans still felt disenchanted by interactions with staff, faculty, and other students. Specifically, veterans report difficulty relating to younger students, faculty teaching their classes, and staff they interact with to obtain various services.

Approximately 70% of respondents were aware of the general social and academic support groups on campus, and more than half were aware of how to get involved with student

support groups if they desired. More than 80% knew where to go for help with their academics. A significant minority (30%), however, of the respondents were unaware of support services that focused on student veterans. The top three support offices that student veterans and dependents of veterans were aware of and utilized at UTSA were the Veteran's Certification Office, Student Financial Aid Office, and Academic Advising offices.

Other important insights were gleaned from the hundreds of comments and notations provided on the survey. As described above, a number of veterans commented on the issues they had in classes or orientation programs with much younger students who have very little awareness of what it is like to be engaged in combat or the challenges the veterans have experienced in transitioning back to civilian life and into academic life. Regarding the latter point, frustration with not receiving the type and amount of transfer credits for courses taken outside the university were key concerns. Additionally, a number of these students reported issues related to their work schedules and managing their personal lives with their school requirements: going to school full time, working full time, and family responsibilities. Since not only academic but also social engagement is important for student success (Kuh, Kinzie, Schuh, Whitt, & Associates, 2010), these veterans are at a disadvantage relative to younger, more traditional college students; their additional responsibilities left them with little to no time to participate in activities on campus that promote involvement and success in college.

Targeted Support

In order to better serve our veterans, the VSAC has established subcommittees to specifically address all of the issues identified in the needs assessment. The comprehensiveness of this subcommittee structure reflects the commitment made by the institution in serving veterans and their families. These subcommittees make recommendations through the VSAC to university leadership. Membership of the subcommittees consists of volunteers as well as special appointments of the subcommittee chair, as appropriate. The subcommittees working on behalf of the VSAC and all veterans on campus are:

- *Veteran Events*: This subcommittee coordinates, plans, and executes events such as VETNET, a veteran student networking event, as well as Veterans Day ceremonies, National Roll Call, ROTC parades, military and family-themed football games.
- *Nonresident Credit Review*: This subcommittee investigates the various types of nonresident credits that veterans coming from the military typically have, and how these credits may be applied to the student's academic record. Examination of transfer credits, military credits, advanced standing credits, credits from examinations, and AP/CLEP testing credits results in expanded opportunities not only for veterans, but for all students utilizing Defense Activity for Non-Traditional Education Support (DANTES) and College Level Examination Program (CLEP) testing, as well as challenge exams.

- *Veteran Student Orientation*: This subcommittee explores how student orientation programs may be adapted to help new student veterans achieve a satisfying orientation experience. An accomplishment of this committee was to develop and add to the veteran web portal an online orientation that informs prospective student veterans of the various offices that provide academic support.
- *Faculty/Staff Veteran Cultural Competence*: This subcommittee explores various approaches to professional development designed to bridge the cultural and experiential gap between the campus community and student veterans. Uniquely tailored presentations for a variety of student affairs and faculty and higher education professional organizations have been created pursuant to this effort.
- *Student Veteran Career Development*: This subcommittee explores viable internship and career pathways for student veterans. These opportunities come in the form of career fairs, partnerships with Fortune 500 corporations and federal government agencies, and opportunities to compete for coveted internship positions with both public and private entities.
- *Communications*: This subcommittee disseminates relevant information to keep student veterans informed about programs, initiatives, and opportunities relevant to their population. Methods of communication include the student veteran web portal, e-mail, electronic bulletin boards, paper/electronic flyers, "how-to" paper/electronic manuals, and more.

UTSA's Veteran Certification Officers (VCOs), both at the main and downtown campuses, work in support of student veterans. These officers ensure that eligible UTSA students receive their federal educational benefits, send certifications of enrollment to the U.S. Department of Veterans Affairs on behalf of the students, and act as a liaison for the UTSA Student Veteran Association (SVA) on campus. Our School Certifying Officials (SCOs) go through extensive training and attend the Western Association of Veteran Education Specialists (WAVES) regional training and Texas Association of Collegiate Veterans Program Officials (TACVPO) Texas conferences to be up to date with legislative issues and changes within the U.S. Department of Veteran Affairs (VA). Additionally, the SCOs attend training to improve their software skills, enabling them to develop spreadsheets to more efficiently distribute certification requests and to track individual student veteran records and total workload among all four SCOs. The VCOs also work with the office of Information Technology to assist in modifying the tuition and fee bill to exclude any line items that are not paid by the VA. Previously this had been completed manually in painstaking detail and was quite time-consuming. Modifying this process through the use of technology to decrease the time required to process VA educational benefits was of significant value and serves as a prime example of how UTSA puts student veteran needs first. These activities have led to UTSA being recognized as a model for certifying student veterans by the WAVES. Further, several educational institutions have consulted our SCOs to glean best practice procedural and programming information.

In addition to the actions of the VSAC and the Veteran Certification Office, and the events and activities previously discussed, UTSA was also one of a few Texas higher education institutions selected to partner with the VA in a collaborative effort known as the VetSuccess on Campus program in September 2012. This program places vocation rehabilitation counselors from the VA on campus to facilitate veterans' transition to college life. The institution provided office space on campus for two senior VA vocational rehabilitation counselors to assist UTSA student veterans navigate through college and secure gainful employment after graduation. These counselors provide a direct line to the VA for our veteran students for a variety of benefits. Specifically, the VetSuccess counselors provide guidance with regard to a wide variety of services, such as:

- how to apply for and maximize VA educational benefits when veterans are eligible for more than one benefit;
- how to apply for vocational rehabilitation and employment;
- vocational exploration and career counseling services;
- information on college credit for military experience and training;
- job placement assistance and referrals to state employment agencies and services;
- how to apply for other VA benefits, including disability compensation, life insurance, and home loan guaranty;
- assistance with electing healthcare benefits through the Veterans Health Administration; and
- information and referrals for VA medical and mental health services to the local veterans center for readjustment counseling services and referrals to on-campus, community, and VA resources to ensure academic success.

Together, the VSAC, the Veteran Certification Office, and the VetSuccess counselors form the nucleus of our support to student veterans. We have strategically designed campus-wide support for this subpopulation in a purposeful, student-centered manner. As a result of our efforts, we have learned a great deal about our student veterans and have had success in terms of providing a wide range of services and activities for veterans, their families, and the campus community. Increasing awareness of the experiences and needs of student veterans is crucial to promoting and developing effective support services. If campus faculty members, staff, and administrators are informed and have knowledge of military culture or the potential impact wartime service may have on service members, their efforts to best serve student veterans and to facilitate successful transitions for veterans will be effective. We have succeeded in raising the level of awareness of the needs of our veterans and their dependents on our campus and have received a great deal of support from executives, administrators, and staff. More veterans are taking advantage of our services—both the traditional services offered to all students as well as those that we have implemented focusing on veteran-specific needs. Additionally, UTSA has been successful in leveraging outreach efforts to external agencies to showcase and highlight not only our student veterans and their achievements, but also to continue to expand programming

for these students. For example, UTSA was honored to have the U.S. Labor secretary, Hilda Solis, visit our student veterans. This marked only the second time a cabinet-level member has visited our university. Members of her department and representatives from the Department of Veterans Affairs in Washington, DC, visited UTSA to meet with student veterans to discuss veterans' education, training, and employment.

The Need for Research and Evaluation

Although UTSA is a recognized leader as a provider of high-quality services to student veterans, formal assessments of these efforts have only recently been undertaken. Ongoing enhancements are being made to the university's databases to assist in the evaluation of the success of our veteran students, including their retention and graduation rates. This enhancement is critical because it will allow us to more specifically form evaluations of programs designed to assist veterans. From a research perspective, UTSA is in a position to contribute not only to the success of its own veteran students, but also to the overall body of scholarly knowledge that assists policy-makers and practitioners in better understanding the needs of this special population.

Understanding the policies and practices that can be enacted to help veterans obtain access to higher education is vital at UTSA. The growing number of veterans transitioning from active duty to higher education presents a challenge to UTSA within a context of growing enrollments and static or shrinking resources. Prudence demands that administrators continue to be proactive in maintaining a high level of service to this population.

Our initial needs assessment showed that student veterans are generally content with their UTSA experience. However, there is still much to do to improve the services provided to student veterans at UTSA. As the student veteran population continues to grow at UTSA, greater demands will be placed on the existing infrastructure and resources that serve this population. Our continuing efforts to both provide services for student veterans and to evaluate the effectiveness of those efforts provide the impetus from which the VSAC, in conjunction with other administrative units, can further enhance the experiences and success of our student veterans and their families in their academic pursuits.

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Supporting Students with Disabilities: A Case Study

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An important but often overlooked component of diversity on college campuses is students with disabilities (SWDs). The number of college students who have at least one disability was estimated at 11% (National Center for Education Statistics, 2009), up from 6% a decade earlier (Henderson, 1999). These totals are based strictly on self-reporting, so the number of students who have some type of disability may even be higher. Since many college students choose not to disclose their disabilities to their institutions (Getzel & Thoma, 2008), it is impossible to accurately report the number of SWDs attending college.

History of SWDs in Higher Education and the Legal Framework

Historically, if SWDs were accommodated on campus, they were students with physical or sensory disabilities. Following World Wars I and II the federal government created programs to assist returning veterans with disabilities in pursuing postsecondary education. These programs evolved to include nonveterans with disabilities and by the early 1970s, spurred by civil rights gains by minorities and women, SWDs gained greater access to higher education (Madaus, 2011). The seminal moment in opening the door to postsecondary education for SWDs was the passage of Section 504 of the Rehabilitation Act of 1973. Section 504, modeled after language in the Civil Rights Act of 1964 and the Title IX legislation of 1972, states that: “No otherwise qualified handicapped individual in the United States shall, solely by reason of his handicap, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance” (Section 504). The more widely known Americans with Disabilities Act (ADA) of 1990 reinforced Section 504 and included antidiscrimination language that extends beyond just the scope of institutions receiving federal funding. Nearly every college or university is now prohibited from discriminating against “otherwise qualified” SWDs (those meeting the institution’s admission and program standards).

When most institutions began offering services for SWDs in response to Section 504 or the ADA, those services were focused on students with apparent disabilities, such as mobility or sensory impairments. The legal definition of disability is inclusive of more than just physical disabilities. Disability is defined as “a physical or mental impairment that substantially limits one

or more major life activities" (Section 504). Beginning in the 1990s more students with non-apparent disabilities began seeking services on campus. Students with learning disabilities and attention deficit disorder began disclosing these disabilities in greater numbers during this time, followed in recent years by students with psychological disabilities and autism spectrum disorders. At Ball State University (BSU), the authors' institution, students with non-apparent disabilities now comprise approximately 75% of the students who have disclosed their disabilities.

Disability Services on Campus

By law, each postsecondary institution is required to have a person or office responsible for providing accommodations to SWDs (Duncan & Ali, 2011), whose contact information should be readily available. Nationally, these offices are organizationally placed in many different administrative units, though usually within student affairs or academic affairs. The titles of the office vary, with Disability Services, Disability Resource Center, or Accessibility Services being the most prevalent. The primary responsibility of staff in these offices is to work with SWDs and their faculty members to facilitate reasonable accommodations for the students.

At BSU, the Disability Services office is housed within the Division of Student Affairs. Disability Services at BSU is staffed by two full-time professional staff members (a director and associate director), a full-time administrative assistant, a part-time graduate assistant, and a part-time undergraduate student assistant. BSU provided services to approximately 650 SWDs in the 2012-2013 academic year. As mentioned previously, the vast majority of the students who have disclosed a disability at BSU are those with non-apparent disabilities, with learning disabilities being the largest category of SWDs. BSU, however, has an inordinately large number of students who are wheelchair users; there are about 40 such students per year.

Disability Services works with SWDs who wish to disclose a disability to the institution and seek accommodations. The office assists SWDs and their faculty members in facilitating a range of services, including testing accommodations (commonly extended time, readers, and scribes), note takers in classes, and textbooks in accessible formats. Disability Services also coordinates with offices such as Housing, Parking, and Transportation to ensure physical access on campus for SWDs.

Types of Disabilities and Accommodations Provided for SWDs at BSU

While every student with a disability is different and accommodations are provided based on the impact of the disability on the individual student, it may be helpful to review general categories of disabilities and accommodations that are often provided for students with those disabilities.

- *Mobility and orthopedic impairments*: Students who have these disabilities can range from quadriplegics using wheelchairs to students with arm or hand impairments that impact writing. Physical access on campus is essential for

students who are wheelchair users. Though every office or classroom on campus may not be accessible, class or meeting locations may need to be switched to offer access. Residence halls that provide accessible rooms and restrooms need to be provided. Classroom accommodations can include extended time for exams, provision of a scribe for exam questions, and a fellow student to share notes in class.

- *Blind and visually impaired*: Adaptive technology is vital for students with visual impairments. Text can be converted to digital formats and screen-reading software can read aloud the text. Magnification software can enlarge text on the screen for the student. While most college textbooks do not come in Braille or large-print versions, these software programs can provide the same access. Classroom accommodations can include extended time on exams, provision of a reader and/or scribe for exam questions, use of adaptive technology on exams, and a student to share notes.
- *Deaf and hard of hearing*: American Sign Language (ASL) is often the primary language for a student who is deaf from birth. It is the institution's responsibility to provide sign language interpreters for classes and meetings on campus. For students who are deaf but do not know or use ASL, the university can offer a stenographer to provide a real-time transcription for the student. Other accommodations that are helpful include captions on any videos that are shown in class and a fellow student to share notes.
- *Cognitive disabilities*: This category includes learning disabilities, attention deficit/hyperactivity disorder (ADHD), and brain injuries. Testing accommodations are the primary area of assistance these students request. Extended time to complete exams (generally 50% longer) is helpful as it allows the student time to process what is being read. Many students with ADHD benefit from being permitted to take exams outside the classroom, in a location with reduced distractions. Students with dyslexia and other learning disabilities also perform better when a test question is read aloud to them.
- *Autism spectrum disorders*: This category of students includes those with Asperger's Syndrome. These are often students who struggle in social situations and may not pick up on cues that others take for granted. Private rooms in residence halls are often requested. While many of these students do not need the typical testing accommodations that other SWDs receive, students with autism spectrum disorders may require more structure from faculty than other students.
- *Chronic health conditions*: Many students on campus have been diagnosed with conditions such as cancer, diabetes, epilepsy, asthma, or fibromyalgia. Many of these students do not consider themselves as disabled, so there is underreporting of these conditions. During flare-ups of the condition, some students may miss class,

so flexibility with attendance policies and due dates could be appropriate accommodations.

- *Psychological disabilities*: The number of students disclosing psychological disorders has risen significantly in recent years. These conditions include bipolar disorder, anxiety and panic disorders, depression, obsessive compulsive disorder, and schizophrenia. Often the manifestation of the disability is class absences. If appropriate, flexibility with attendance and due dates may be requested. Additionally, testing accommodations such as extended time and a location with reduced distractions can be beneficial.

The Transition to College

For the SWD, the transition into college can be more difficult than for other students. The two systems of providing disability services to students (high school and college) are quite different legally and philosophically. As a result, services that were offered at the high school level for the student may not be offered or available in the same way at the college level.

The Individuals with Disabilities Education Act (IDEA) is the primary law that governs disability services in K-12 schools. Its provisions do not apply to postsecondary schools. It is the responsibility of the school district to identify, evaluate, and provide specialized instruction to SWDs at no cost to the student. In planning the specialized instruction for the student, the school, the student, and his/her parent(s) will create an Individualized Education Plan (IEP) that describes services and modifications that the student is to receive.

At the postsecondary level, the onus of responsibility for receiving services shifts to the SWD. The student must disclose the disability to the college and provide appropriate medical or psychological documentation to support the request for accommodations. As described above, Section 504 and the ADA are the laws that prescribe the responsibilities for postsecondary institutions regarding SWDs. These laws prohibit colleges from discriminating against qualified SWDs but do not provide for specialized instruction as in the K-12 system.

The best way to describe the difference between services for SWDs in high school and college is to consider that the high school's goal is to ensure the success of the student with a disability; the college's goal is to provide access for the student. As a result, the high school often will modify standards and tailor the student's curriculum to the specific needs of that student. The college, on the other hand, will make sure that the student has equal opportunity to participate in all that the college has to offer and will provide reasonable accommodations to its academic requirements. However, standards are not modified specifically for SWDs, and a reasonable accommodation would never alter the integrity of a course or program of study.

BSU Initiatives to Promote Success for SWDs

BSU has a long and proud tradition of being an accessible campus for SWDs and was named a "disability-friendly" institution and an "ADA-Plus" college (Tiedemann, 2012). Because of its reputation of being welcoming and accessible for SWDs, BSU has been proactive in addressing some of the transitional challenges that SWDs face. Though disability plays no formal role in the admissions process, the university does reach out to newly admitted students to let them know of services available. Each student admitted to the university receives a "Self-Disclosure Form for Students with Disabilities" with the letter of admission. This informs the student of the presence of the Disability Services office and allows the student to disclose any disability prior to enrollment. This early disclosure of the disability gives the student and staff in Disability Services plenty of time to arrange for needed academic and housing accommodations prior to the student's matriculation.

The Disability Services office hosts informational meetings for new students by disability type to introduce the students to the services and resources available to them. Sessions are provided for the following groups: students with cognitive disabilities, students with mobility impairments, students who are blind or visually impaired, and students who are deaf or hard of hearing. An important component of these sessions is explaining to students the differences in how disability services are administered at the postsecondary level. Students who then want to request specific accommodations can then meet with staff from the Disability Services office to create a plan for implementing those services. If classroom accommodations are needed, the student would then provide a letter from the Disability Services office to faculty members that verifies the disability and lists the appropriate accommodations.

A unique initiative that BSU's disability services staff and faculty members developed several years ago is the Faculty Mentorship Program (FMP) for SWDs. The FMP was created as a way to make vital connections with faculty for SWDs. Over the life of the program, more than 300 students have teamed up with more than 50 faculty members from 36 academic departments. The faculty mentors meet individually with students on a regular basis during the transitional year and assist students who are dealing with the complexities of the academic experience at the university. Data collected from student academic records and from tracking usage of campus services demonstrated that FMP has been successful in several ways:

- Students who participated in the FMP consistently earned higher grade point averages and more credit hours than those who did not to participate.
- The retention rate of the students who participated in the program was significantly higher than that of those who did not participate.
- Students participating in the FMP made more use of campus services and resources, such as those offered by the Learning Center and Disability Services.

In annual surveys conducted among faculty participants in the FMP, faculty reported that they were comfortable teaching SWDs and felt that they understood the learning needs of

students with a variety of disabilities. Faculty also indicated that they were able to incorporate the training they received in working with SWDs into their teaching.

While programs such as the FMP are important academically for SWDs, social integration is another critical component for student success. SWDs have access to more than 300 student organizations and clubs at BSU, as well as the opportunity to participate in disability-specific groups. The Alliance for Disability Awareness is a university-funded group that offers programs for the campus community. For students who use power wheelchairs, BSU offers power soccer, a club sport whose participants compete against other teams across the country. BSU was the first university to offer participation in a power soccer team to its students.

Though the limited national research on academic outcomes for SWDs has indicated that a disability negatively impacts success (Burgstahler & Doe, 2006; Horn & Berktold, 1999), SWDs have had positive outcomes at BSU. A study by researchers at the university found that SWDs at BSU are retained and graduate at the same levels as their peers without disabilities (Wessel, Jones, Markle, & Westfall, 2009). In this research, cohorts of students were studied over three years and the outcomes for students with apparent disabilities, non-apparent disabilities, and without disabilities were investigated; findings revealed only minimal differences between the outcomes for each group of students.

BSU staff members from Disability Services and Institutional Effectiveness analyzed the 2012 administration of the National Survey of Student Engagement (NSSE) to determine if SWDs responded in a manner commensurate with other students academically and in cocurricular activities. The data indicated that SWDs are as engaged academically and in cocurricular activities as other students, and that SWDs are developing relationships with fellow students and faculty at rates similar to students without disabilities. One interesting finding was that SWDs reported a higher level of satisfaction with their experience at BSU than students without disabilities.

Conclusion

SWDs are a population that continues to increase in number at postsecondary institutions. With recent amendments to the Americans with Disabilities Act that are designed to broaden the scope of who might be considered as disabled and to make it easier for these individuals to verify their disabilities (Heyward, 2011), it can be expected that even more college students will be disclosing disabilities in coming years. A better understanding of who these students are and the services they may need is critical for higher education administrators. As postsecondary institutions face greater scrutiny from governmental bodies to provide evidence of student success, it becomes imperative that programs are developed to promote successful outcomes for SWDs. The model described in this case study, of early interventions to promote academic integration and social engagement, is an example of an approach that has facilitated success for SWDs at one institution.

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Shifting the Paradigms: Enhancing First-Generation Students' Performance

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First-generation students comprise an increasingly significant segment of the national undergraduate population in the United States. According to the U.S. Department of Education (2008), almost one third of undergraduates are classified as first-generation. While a lot has been written about first-generation students and the attendant struggles to support them, most of the emphasis has been on access and social-support networks. While access and social support are important, these approaches are limited. This case study explores the interconnectedness of first-generation Appalachian students and their risk factors that include socioeconomic status and academic under-preparedness for college, and then proposes strategies for the support and overall success of these students.

Appalachia Ohio will improve its economic competitiveness and standard of living as educational attainment levels increase. The most recent Ohio Department Development Services Appalachian Factsheet shows the educational attainment for people over the age of 25 who receive a bachelor's degree is only 10% (Ohio Department of Development Services, 2012). Within the same population, only 7.1% earned an associate's degree and 5.7% earned a master's degree. Since Shawnee State University's inception in 1986, one of the core features of its unique mission is to provide greater access to higher education for the citizens of the Appalachian region through open enrollment admissions policies. Pursuit of this primary objective has required SSU to address the challenges of serving a student population that is historically underrepresented in higher education and often underprepared for college. The university is situated in a region characterized as having a high poverty rate, many fiscal challenges, and low levels of adult education attainment. Almost four out of every five students at Shawnee State University are first-generation college students, many of whom are insufficiently prepared academically, socially, economically, and culturally to succeed in college. They are in need of intervention, developmental coursework, and support services.

The Ohio University Voinovich Center conducted a research study, Access and Success—Appalachian Ohio, in 2008 focusing on the aspirations and college-going culture of the region. Their research found that almost half of the students planning to continue their education indicated they planned to attend a higher education institution within fifty miles from

their home. The Access and Success study's high school respondents identified that the factors that contributed to their choice of college were, in priority order: location, program of study, cost, reputation, and personal/family-related reasons.

Using the Access and Success research findings, SSU analyzed its student population and found a majority of its students did reside within close proximity to the university. From the SSU data, trends over the course of six years were compiled; from these trends, the university was able to identify the primary high schools that SSU students attended. The majority of the students were graduates from 20 local high schools. In many ways these high schools are primary "feeder" schools to the university.

With nearly 44% of first-time SSU college freshmen entering the university underprepared and in need of developmental courses, this feeder high school information became a vital part of our institutional outreach within our region. Part of the SSU challenge has been communicating college readiness expectations to those students entering directly from high school. Linking with our regional high school partners is a vital first step into communicating with the aspiring SSU student. Parallel with this outreach effort is communicating with these high schools and the SSU campuses about the need to decrease the number of developmental course placements, and to increase course and degree completion rates to support student retention efforts (Regents, 2012). Many of our entering Appalachian first-generation students were not viewed by their high schools as aspiring to become a college graduate—so our retention efforts for these students have had a multifaceted approach.

One of the major challenges for SSU in its effort to improve postsecondary success is its mission of serving the Appalachian region. This region has historically lower college attendance, college completion, and educational attainment rates than the rest of the state and the nation. Less than 12% of the adult population in most of Ohio's Appalachian counties completed college, which is well below the overall national Appalachian rate of 17.6% and the U.S. rate of 24.4% (Jacobsen, 2012).

Despite the challenges, serving the Appalachian population is extremely important to our institution as SSU is the only four-year university located within this sparsely populated, geographically isolated part of the state. The low educational attainment rate coupled with the high rate of unemployment—12% in SSU's home county (Ohio Department of Development Services, 2012) and 15% in the county to the north (Ohio Department of Development Services, 2012)—make the SSU mission critical to improving not only the minds of the students the university serves but also their quality of life and that of their families and communities, as well.

The first section of this case study identifies the first-generation risk factors faced by Ohio's Appalachian students. These risk factors not only include being academically underprepared, but also underprepared with regard to college experience and knowledge of the expectations of the institution. The second section presents strategies and curricula design, out-of-class learning opportunities, and student-support services geared to address the risk factors and challenges of the population served. These supportive services are intentional and intrusive. The final section presents the role of data analytics in identifying and monitoring at-risk students

and university strategies impacting those students in order to encourage these students' persistence and success. The institutional profiling of first-generation students, via relevant data (student expectation surveys) and identified risk factors provided the framework to design a support system. Through an evaluative design, the data analytics utilized by the institution supports the transitioning of these students to experience academic success from recruitment into college level courses. The data from these surveys are consistent and provide decision makers with information necessary to strategically plan programs.

First-Generation Risk Factors

The risk factors first-generation Appalachian students face related to being academically underprepared, coupled with other, nonacademic challenges, often result in tension between students and the institution. Individual students struggle with their lack of college experience and knowledge of the expectations of the institution. From the data we have compiled from a range of existing data sources, we know the following:

- A lower percentage of Appalachian students take courses in high school that are designed to prepare them for college than their peers across the state.(Ohio Board of Regents, 2012)
- A lower percentage of Appalachian Ohio school districts reported high school graduates taking advantage of postsecondary enrollment options that allow college coursework to be taken while in high school (Voinvich Center, 2007).
- Approximately 54% of Appalachian Ohio school districts in 2007 had one or more high school students taking an Advanced Placement test; this is in comparison with 71% of non-Appalachian Ohio school districts (Voinovich Center , 2007).
- Of Ohio's college students, 60% of first-generation students were considered high risk compared to 28.5% of those who were not first-generation.

First-generation students' fear of the unknown, lack of knowledge about where to find help, and a lack of role models may add to the tension between student and institution. Shawnee State University struggles not only with promoting the success of students who are academically underprepared, but additionally with bridging the disconnect that exists between these students and SSU's expectations. Recently, the institution recognized that to be successful it had to develop and implement comprehensive strategies to better understand the prominent barriers to its students' success (i.e., course completion and degree attainment) and to address the disconnect between students' expectations and the institution's expectations.

SSU's Strategies to Mitigate Risk Factors

Early on, strategies to address the academic under-preparedness of the first-generation students involved designing a student success center (2010) featuring peer mentors, individualized and

small group tutoring, and placement assessment for developmental coursework; the center's efforts were coupled with bridge programs to enhance and support the academics. Outside of academic concerns, many first-generation students struggle with navigating the necessary business of "going to college." SSU's Student Business Center was created to house the bursar, registrar, admissions, and financial aid services within a single operation. The Student Business Center functions to help first-generation students navigate the unknowns of the university admissions and fiscal and course registration processes. For review and evaluation of policies and practices a university-wide Enrollment Management Committee was instituted. The Enrollment Management Committee includes representatives from academic, student affairs, and student government bodies; it reviews policies and practices and makes recommendations to the institution leaders.

In order to address more of the students' needs, the university's first-year curriculum was reviewed and realigned through revision and the addition of out-of-class learning opportunities (including community service and career-development activities). Student support services were also expanded to include more commuter activities with a dedicated commuter advising and mentoring program implemented in fall of 2012. Academically, a First Year Seminar was created, incorporating academic and nonacademic services. It is to be implemented in fall of 2013. These services have been designed to be intentional and intrusive as many of our students lack awareness of successful college strategies (i.e., time management, study skills, and financial literacy).

SSU realized the early attempts were a good start toward addressing the first-generation retention challenges. However, there continued to be students falling between the cracks. Our president, Rita Rice Morris, has been instrumental in supporting programming to address the challenges faced by underprepared students. She defined 10 steps to help the student succeed (Morris, 2013). These 10 steps are the foundation of our work to support student success. The university leadership team led by Dr. Morris and Provost David Todt enacted organizational changes to bolster the design of support systems for the targeted students. Two of the major organizational changes were:

- Enhancement of the university's data-based decision-making capabilities; this included redesigning the traditional Institutional Research Office into the Office of Institutional Effectiveness (OIE). The OIE is charged with facilitating and promoting data-informed decision making across the university.
- Creation of a University College to link access among critical academic and student services that provide a university-wide focus on efforts to improve course completion, retention, and graduation rates.

The OIE and University College work closely to identify student needs and to design communication and support systems to address those needs. These two organizational changes have had a huge impact on the retention of first-generation students due to the constant review and analysis of SSU student data points. While these expanded retention efforts are still new to the university, administrative and faculty leaders are supportive of them.

With the redesign of the IR office to the OIE office, it became apparent that Shawnee State had a rich history of providing student support in a variety of venues without a coordinated campus-wide effort. What could be accomplished with a more coordinated or campus-wide approach? The OIE director, Chris Shaffer, and his staff instituted a culture of data collection and analysis to establish a profile for the entering SSU first-generation students.

Data Collection and Analysis in SSU Student Success

The Office of Institutional Effectiveness made several important strategic decisions. The first critical decision was the development of a more coherent "intent" analysis. The campus had the ability to and did store massive amounts of data. Most of the data were and continue to be generated through the campus relational database. Other data elements came from campus committees and other groups. Regardless of the origin of the data, the campus had a very good idea of what happened among at-risk students; however there was a desire to get a better idea *why* it happened. The OIE's associate director, Katy Mathuews, spent a considerable amount of time working with stakeholders to help administer national surveys such as Beginning College Survey of Student Engagement (BCSSE) and National Survey of Student Engagement (NSSE). She also spent time creating and administering local surveys. This work was done so that OIE could get a more holistic understanding of campus activities and what data stakeholders needed or what data simply did not exist.

The other major decision point was to build off of previously collected datasets that already had legitimacy on campus. There was some criticism from stakeholders of data inconsistency. Some of their concern was due to the complexity of the data. For example, the number of students one will get to respond to a survey depends on *when* you ask the questions. Some stakeholders wanted to know based on a dataset prepared in October, while others wanted the data analysis to look at a September dataset. Most campuses have a "15th Day Report," so OIE used that report as the foundation for the development of a massive dataset. Using this dataset, OIE provided the institution with more and robust disaggregated information for data analysis with consistency in time collected. The student name became the focal point of the data. The total number of lines in the dataset was equal to the number of students. Because students focused on in this effort are from the same place and have standardized test scores, it is possible to use one massive database in order to identify trends. OIE took six years of the 15 day reports and "stacked" them on top of each other. The stacked reports provide insights about student retention or what majors have high numbers of less college-ready students. Once the data were prepared, they were uploaded into a Tableau™ (Tableau: Visual Analytics for Everyone, 2013) interactive workbook. Tableau™ provided the tool to help analyze the data.

One of the data elements in the database is the high school attended by the student. In fact, Tableau™ was used to help identify which schools were SSU "feeder" schools. This led to the OIE and University College reaching out to the largest feeder high schools in order to begin discussions about the successes of their graduates. When SSU staff members visit a school, it is

possible to create a profile of SSU students who attended that high school. The data shared includes top majors, GPAs, the number of freshmen retained, and the changes made in majors. The data are never shared at the student level due to privacy laws. Because not every student from a given high school attends SSU, it is possible to have open conversations about student success with feeder school administrators; these conversations have not been perceived as judgmental.

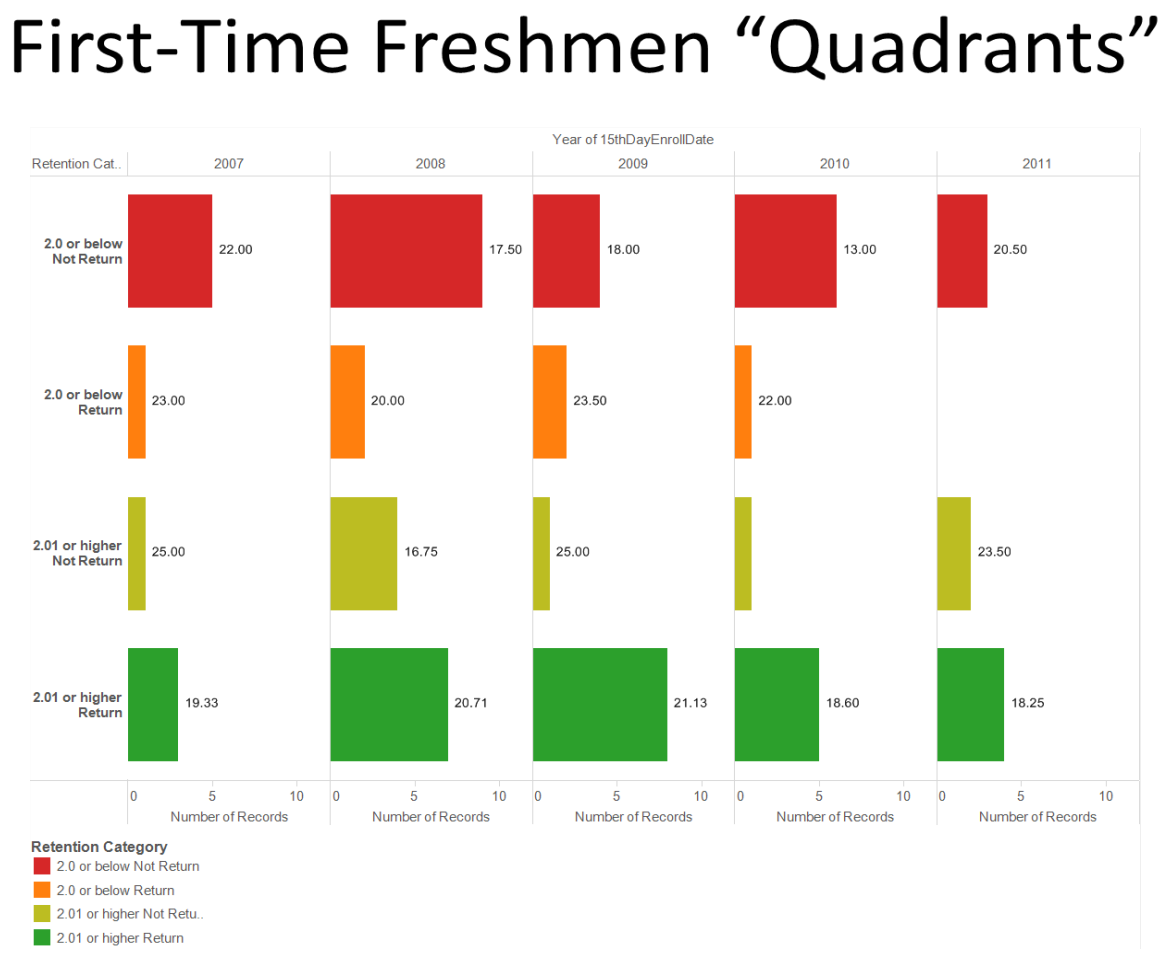
The decision to visiting the feeder schools was an important one made early on in our retention work; one of the reasons the visits have had such an impact is because of the ability to take all the discrete data points and group them into something that makes sense to stakeholders. As the visits were underway, it became apparent the student data sets needed to be grouped into meaningful quadrants. Several members of the SSU team attended a retention workshop put on by the Educational Policy Institute in fall 2012, a research based quadrants idea was adopted for use in the high school-higher education alignment work. EPI cited the work of Dr. Peter Dietsche, who spoke of putting students into "quadrants." For instance, one could choose a GPA and determine the line that separates success and failure in terms of grade point average. Then the institution could determine if those students in each quadrant had stayed or left. SSU tried this, creating a workbook showing the results of the data. The university established a 2.0 GPA as the line separating success and failure and examined students' performance as first-time freshmen and then their academic status the following year. Students were categorized in the second year as either:

- Successful Persisters,
- Unsuccessful Persisters,
- Unsuccessful Leavers, or
- Successful Leavers.

These four categories were used throughout the entire workbook. This methodology helped identify factors that might affect retention. Figure 1 shows the quadrants from one of the high school visits. The quadrant color coding can be applied to other data elements in the OIE database. For example, each major selected can be viewed through this lens on a high school by high school basis. In other words, the university can share how the high school graduates are persisting and in what majors as college students. The data can be one year to a trend analysis of six years (all students from the feeder school GPA for the first year of college and their retention rates over time).

In addition to providing the institution data to share with the feeder high schools, the data base provided an opportunity to address persistent myths across the campus. Some members of the SSU community believed older students were retained at higher levels than younger students. Others believed students from local areas performed worse than students from more affluent regions. Neither of the myths proved to be statistically true, and once the data were presented to the campus faculty and staff, a common, data-based, picture of the student population began to be recognized across the campus.

Figure 1. High School "Quadrant"



Data source: SSU OIE Office

University College provided the unified support for all retention and student-support services to focus on student success. The UC found the data base vital in decision making for student success initiatives. As a result of the data review, a new initiative, Success Curriculum, will be launched in fall 2013 to support the identified at-risk students with both academic and non-academic services. The UC is within the department of Academic Affairs but understands the connection and reliance on the efforts of Student Affairs. The results of the data analysis described above have provided the impetus to strengthen the sharing of our data within and across the SSU campus as well as with our feeder high schools to develop joint strategies to improve the college readiness of our entering students. For example, using the high school data, our mathematics chair, Dr. Krista Maxson, began aligning with local high school math teachers to develop a common senior-level math course. This activity included joint professional development training for the high school–higher education faculty and has led to the

development of a dual enrollment statistics course (designed by select high school and higher education faculty).

In conclusion, our work is in the beginning stages. However, the increase in collaboration has led to furthering our capacity to create opportunities for our first-generation and underprepared students. Connecting the data with our feeder schools and beginning a dialogue on who is attending, and their strengths and weaknesses, are beneficial. The work is not easy. Developing strategies to support student success built upon a data-based system with a collegial decision-making process is hard work. Being transparent and creating opportunities with campus stakeholders to discuss and share the data has allowed our institution to begin the journey. It takes courage, commitment, and institutional persistence to make the difference.

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Part 5

Supporting Student Retention and Graduation through Faculty Engagement

Part 5 expands the scope of the *Sourcebook* initiative to highlight the role of faculty in engaging students in active learning. This addition to the *Sourcebook* represents a continuing effort by CSRDE to share information on how collaborative efforts of institutions to build bridges between activities, functions, programs, and faculty can improve student retention. Topics of chapters in this Part range from faculty and staff partnerships at the institutional and programmatic levels to individual course redesign that has as its goal to enhance student engagement.

Part 5 chapters are organized into two subsections: "The Role of Faculty" and "Faculty Conversations." The chapters under subsection A, "The Role of Faculty," describe faculty collaboration in institutional and programmatic student success programs. They highlight the value added when bridges are built between faculty and staff. Chapters in subsection B, "Faculty Conversations," describe faculty-driven, innovative classroom-related ideas for engaging students, recognizing that the classroom is the one place where faculty and students are most likely to meet. This subsection describes faculty collaborations that are aligning classroom-related activities and course design with institutional, program, and individual goals.

Consistent with the concept of the *Sourcebook*, it is our goal to keep this conversation about faculty engagement and initiatives that support student success both vibrant and current through networking and the addition of new chapters over time.

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The Power of Faculty to Promote Retention via Campus Engagement: A Campus "Passport" Program

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"We know that first-year students make critical decisions about how they spend their discretionary hours soon after they arrive on our campuses. We also know that the institution has a crucial role to play in helping students make these decisions" (Davis & Hunter, 2003, p. ii). Because most students spend more time on a more frequent basis with faculty than with any other employees of an institution, and because students' lives at college obtain structure from their academic courses, faculty are in a unique and powerful position to guide students in wise and productive use of their time (c.f. Tinto, 2012). This includes not just their academic work, but their co-curricular engagement, as well.

This chapter describes a high-impact way that faculty can promote co-curricular engagement: Include course assignments that lead students to participate in campus events. We describe our campus's "Passport" program, conceptualized by faculty who teach our first-year seminar course, in which students "travel" to a variety of campus events and provide multifaceted evidence of the program's effectiveness for engaging students in the campus community. Faculty at any institution can readily facilitate their students' integration into their campus community, and thus promote retention, by providing structured opportunities to engage their students outside of the classroom.

The Passport program provides a mechanism for faculty to boost student engagement and retention because the process of becoming an integrated member of a campus community can be challenging for first-year students. Simply immersing them into the college community is not sufficient. Instead, faculty and other college personnel must create multiple intentional experiences to enable new first-year students to transition to college successfully (Chaskes, 1996; Cuseo, 2008; Hunter, 2006; McElwee, 2013; Tieu, Pancer, Pratt, Wintre, Birnie-Lefcovitch, Polivy, & Adams, 2010). "Successful transition" means more than simply retention

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(although that, too, is important) (Alexander & Gardner, 2010). Students may not know what resources are available or where to find them, and may not be connected to the active co-curricular life of the campus. This knowledge and participation are crucial, as a substantial portion of what students learn during the college years stems from their co-curricular involvement (Kuh, 1995). In this chapter, we describe a faculty-developed programming initiative attached to a first-year seminar (FYS) program designed to engage students in the campus community, which we termed the Passport program. We present multiple sources of data regarding the program's efficacy and make recommendations for its portability to other campuses. This program is a demonstrated successful way for faculty to support their students' engagement and success in their first year at college.

The Passport Program

Need for the Passport Program

At the end of the first year, most students report that prior to beginning college, they expected to be more involved on campus (through co-curricular activities, meeting with faculty, etc.) than they actually were (Kuh, 2005). Effective programs for first-year students should blend students' lives in and out of the classroom and can effectively introduce them to the campus community and to the engaged life (Donahue, 2004; Kuh, 1995, 2005; c.f. Light, 2001). In fact, student learning cannot be attributed to curricular or co-curricular experiences alone; in real life, they are blended experiences (Donahue, 2004). Student involvement on campus is predictive of greater persistence and learning, especially when that involvement involves interaction with faculty members (Tinto, 2012; Tinto, 1997) and is relatively highly structured (Tieu et al., 2010). Indeed, students are aware of the importance of these activities in their development (Donahue, 2004; Kuh, 1995). Faculty members can play a key role in promoting such campus involvement.

Toward this end, the Passport program was proposed by the faculty advisory board of our first-year seminar (FYS) program for adoption by instructors of individual courses to promote student participation in a variety of academic and co-curricular events and experiences. At our institution, the Passport program was designed to be a framework that is easily integrated into individual first-year seminar courses so that faculty who choose to include co-curricular programming as a course assignment could do so readily by adopting the program. Similar programs are used at many campuses to support student retention, learning, and engagement in the campus community; as Camarena, Saltarelli, and Lung (2006) found during their review in 2004, syllabi for FYS courses often include required participation in campus activities (National Resource Center for the First-Year Experience and Students in Transition, 2012; see also Cuseo, 2010; Griffin & Romm, 2008). A survey of FYS programs showed that two of the most common goals of these efforts are to orient students to campus resources and services and to develop a connection between them and the institution (Padgett & Keup, 2011), both of which can be addressed via a Passport program. However, published data about the structure or empirical

support for such programs is scarce. One study (Camarena et al., 2006) described very positive outcomes of a series of campus activities linked to a First-Year Experience (FYE) course; however, the data came from general end-of-semester student evaluations of the course and did not fully describe or fully evaluate the program. This chapter presents a discussion of the Passport program and several sources of empirical evidence for its efficacy in detail, with specific suggestions for adoption by any faculty member to increase students' engagement and thus retention.

The institutional context for this program was Rowan University, a four-year state-designated research institution located in Glassboro, New Jersey. The undergraduate enrollment was approximately 10,500 in fall 2011, and 12,000 in fall 2014. The first-time freshman retention rate for students admitted through the typical admissions process in fall 2013 was 88%; the four- and six-year graduation rates for students admitted in fall 2009 were 48% and 67%, respectively. Note that these figures represent the most recent retention and graduation data available.

Structural Features of the Passport Program

Many students enrolled in our campus's first-year seminar program are eligible to participate in the Passport program, if their FYS instructor chooses to adopt the program for their course. The FYS at our institution is academic and required. Sections of regular courses across the curriculum (e.g., introductory courses in writing, biology, marketing, etc.) are designated as FYS and generally have 20 or fewer students; are taught by specially trained, permanent, full-time faculty members; are open only to first-year students; and address the transition to college academics via emphasizing collaborative learning, critical thinking, writing, library skills, and general academic skills within a specific course context. In fall 2011, our campus offered 90 sections across most academic departments. Due to significant growth of the number of first-year students, in fall 2014 there were 142 such sections.

All instructors of the first-year seminars since fall 2011 have been invited to offer their students the opportunity to participate in the Passport program as part of their course requirements. In fall 2011, 29 sections were taught by 19 instructors, encompassing more than 600 students (representing approximately 33% of FYS sections). In fall 2014, 95 of 142 sections participated (67%), taught by 59 instructors, encompassing 1,901 students. Instructors determine how the Passport program factors into their course grades. Much of the data reported here was collected in fall 2011 as part of initial program assessment. In that semester, most of the instructors using the program included it as a requirement and assigned it 5% of the course grade. Four instructors with six unique sections presented the program as an extra credit opportunity instead of as a requirement.

Students participating in the Passport program attend at least one campus event in each of five categories: Academic Enrichment (e.g., a departmental symposium), Artistic (e.g., a dance recital), Athletic (e.g., a football game or exercise class), Community Engagement (e.g., a club

meeting), and Student Success (e.g., a GPA workshop). Within these five categories, students have a wide variety of choice as to the specific event they attend. Individual faculty members have the option to revise specific program parameters if they choose (e.g., the number of events students are to attend, requiring attendance at a specific event, etc.).

For each event attended, students answer several questions about it in writing. In 2011 the students responded via a fillable, submittable PDF form; now it is a web form available from any browser. Students describe the event and answer five open-ended reflective questions that address their expectations of the event prior to attending; whether the event met their expectations; what they learned about the university and college life as a result; what they learned about the specific event category (e.g., the arts); and whether they plan to attend similar events in the future. The reflective questions are included to encourage deep consideration of what the student experienced and connections to broader themes both in content knowledge as well as campus knowledge (c.f. Donahue, 2004). Students provide to their instructor documentation of attendance at each of the events (such as a ticket stub, picture of themselves at the end, note from a staff member, etc.). In 2011 this was handed to the instructor; now students can upload photos of the documentation to the Web site at which they record their participation in the event.

Faculty members provide their students with a Student Guide that explains the Passport program, provides suggestions for types of event, explains how to communicate their event participation to their instructor, references resources for finding campus events (including links to the university calendar and Passport program Facebook page, on which we routinely announce events), and includes contact information for questions. Faculty can access a Web-based Faculty Guide with additional information regarding the rationale for and goals of the program and suggestions for its effective implementation. Faculty are also invited to attend workshops regarding the program when selecting whether to incorporate it into their course.

Assessment Strategy and Results

We conducted a multifaceted program evaluation that assessed data from three sources: instructor feedback, reflective writing in the Passport documents, and student surveys.

Evaluating the Faculty Response

The faculty response to the Passport program is described here based on a survey of faculty who used the program in their courses and on narrative descriptions of the value of the program by faculty who have used the program in multiple semesters.

Faculty Survey. Instructors of participating sections in fall 2011 were invited to complete a survey about their view of the Passport program via an online survey. Of the 18 faculty eligible to complete the survey (excluding the first author, who was the 19th participating instructor), 13 actually completed the survey. In response to a question regarding how valuable

they perceived the program to be for their students, 11 instructors indicated *Very Valuable* (3) while 1 indicated *Somewhat Valuable* (2) and 1 indicated *Not Valuable* (1) (M = 2.77, SD = 0.60). They did note that some students questioned the value of the program. In response to a question regarding how valuable they thought their students viewed the program, 2 instructors indicated their students viewed it as *Very Valuable* (3), 9 indicated *Somewhat Valuable* (2), and 1 indicated *Not Valuable* (1), M = 2.08, SD = 0.49. The comparison for their own view compared to their perception of their students' view revealed a significant difference, paired t (12) = 3.96, p < .01, η^2 = .57, such that the faculty viewed the program as more valuable than they perceived their students did.

Instructors were satisfied overall with the parameters of the program. They tended to report that the number of events was appropriate (10 instructors said event attendance required was the correct number, whereas 2 said fewer events should have been required, and 1 said more should have been required). The majority of instructors also indicated that the event types were appropriate (9 indicated agreement, with 1 nonresponse). A majority also found the reflection questions appropriate (10 indicated agreement). Instructors also responded to three attitudinal items on a 5-point Likert scale, from *Strongly Disagree* (1) to *Strongly Agree* (5). These showed highly positive attitudes toward the program: For "The Passport program should become a required part of [the FYS]," M = 4.00, SD = 1.00; for "I would like to participate in the Passport Program in the future," M = 4.62, SD = 0.51; and for "The Passport Program felt like a waste of time," M = 1.46, SD = 0.46. Overall, the faculty perceived considerable value in the program for their students and plan to participate again.

In the Words of Faculty. We requested statements from some faculty members regarding why they have chosen repeatedly to include the Passport program in their FYS course and what they see as the benefits of it:

> *Faculty Member from Computer Science:*
>
> I think the content and design of the [Passport] program is excellent, and on the whole achieves a great balance between activities that foster acclimation to Rowan for new students, and the academic and instructional priorities of a core course in a student's major program of study. The Passport component works very well for the students who participate. . . . Students consistently report finding new interests, rewarding campus connections, and unexpected benefits from their Passport events.

> *Faculty Member from English:*
>
> Freshmen can be hesitant about getting involved in campus activities. The Passport program gives them an easy entry to getting engaged on campus, since it's a requirement. Furthermore, the freshmen in my classes have used the Passport program as an excuse to make plans with classmates, which is especially helpful for commuters and for shy students, who are less likely to try to organize such an outing. Having a more secure relationship with

classmates inside and outside the classroom is a real plus. . . . My students have almost without exception really enjoyed the Passport events they attended. . . . Last fall, one commuter objected vociferously to having to spend more time on campus, saying this cut into her off-campus work schedule. I felt she was really at risk for dropping out, as she seemed rather unhappy and disconnected from classmates. However, that student found an event that she loved, and she got involved in it. Subsequently she changed her major and seems confident and happy. . . . Because of the Passport program, many students make such connections much earlier in their academic career. . . . The Passport program has also made me, as a faculty member, much more aware of what is going on campus-wide, which has made my professional life more satisfying. Setting a good example for my students means I'm more likely to support colleagues by attending a lecture or panel discussion. Last fall I even attended my first Rowan basketball game when I realized that one of my students was on the team.

Faculty Member from Theatre and Dance:

I find that asking freshmen to participate in the Passport program serves at least two important functions: it helps me track whether my students are getting fully engaged in all the campus has to offer and it also helps me see what kinds of activities my students are particularly interested in. It also requires them to assess, track and evaluate the events they are attending and that provides them and the university with valuable information about how to best engage and retain the freshman population. The first semester is such a critical time of change and growth for students—many of them are already way outside of their comfort zones but that also means that they are open and impressionable so it is also a perfect time for them to do and see things they have never seen and done before. The Passport program may help them experience something that can make a lasting impression and/or allow them to meet people and feel more "at home" on the Rowan campus. Finally, I teach in the theatre and dance program so I also like that the Passport program gives students credit for seeing our shows on campus—it builds audiences at the same time that it exposes students to the arts and shows that may be very different than those they saw in high school. The Passport program has proven a great way to introduce Rowan freshmen to the wide range of options and opportunities that makes our university unique.

Faculty Member from Engineering:

I find that the Passport Program is important . . . to help students transition to the social environment of a college campus. This is a crucial program for

> engineering students, since it helps them meet other students outside of the college of engineering, and gets them out from behind their computers. . . . [The] Passport program serves to introduce students to all that a college campus has to offer, and for engineering students this is important since many of their classes are in the engineering building and they tend to become isolated. At first students seem to be apprehensive of trying non-engineering events, but I've had positive feedback about the art exhibits and sporting events. The Passport program gives students a chance to be inspired by the activities of other students on campus, and discover healthy social outlets that they can take advantage of as they progress through their academic career.

Faculty Member from Health & Exercise Science:

> I really enjoy having the Passport program incorporated into my [FYS] courses. It provides a great tool at multiple levels. First, opportunities within the program permit students to attend a wide variety of activities. While many students do have friends at Rowan, many are here knowing almost no one and many have really never been away from home before. Perception by students by the end is very high. I find that by my being flexible regarding options assists in keeping it positive. The few who are less positive about its benefits typically are my commuters and/or they have jobs. . . . As I watch my students begin to discuss the assignment, I note they begin to include other members of the class. They may discover that a student lives in their dorm. I have them share regularly which event they have seen [to encourage] more group interaction. The program offers options for [removing] boundaries, i.e., include seeing something you would never see.

Evaluating the Student Response

The student response to the Passport program is described here based on a content analysis of student entries on the Passport document, a student survey, and students' narrative descriptions of their experiences attending campus events.

Content Analysis of Passport Documents. Evidence of the value of the Passport program for building student interest in educationally relevant campus activities can be found in analysis of the students' reflective writing responses regarding their event participation. We randomly selected 20% of the student responses for each event type in fall 2011 (n = 270 events). We coded the responses to three of the reflective questions. We coded the students' described expectation for the event and their actual experience of the event as *negative* (1), *neutral* (2), or *positive* (3). We coded their responses for whether they plan to attend similar events in the future as *no* (1), *maybe or cannot determine* (2), or *yes* (3). Students' descriptions of their experiences and future plans reveal very positive outcomes: Student expectations for each event prior to

attending were 22% negative, 32% neutral, and 46% positive. They reported their actual experience as 5% negative, 15% neutral, and 80% positive. A paired-samples *t*-test confirmed that students' actual experiences (M = 2.75, SD = 0.54) were more positive than they expected (M = 2.24, SD = 0.79), t (258) = -9.10, $p < .0001$, $\eta^2 = .24$. Additionally, 83% indicated they would plan to attend similar events in the future, whereas only 9% indicated they would not and 8% were unsure or undetermined. Thus, analysis of students' reflective responses illustrates the positive campus experiences they encountered as a function of the Passport program.

To determine replicability, we conducted the same analyses on student event reports using fall 2014 data. Here, 10% of randomly selected student responses (n = 566 events) were coded. Students' expectations for the events were 8% negative, 76% neutral, and 16% positive. Coding of the valence of their actual experiences showed 5% negative, 54% neutral, and 41% positive. In response to whether they would attend similar events in the future, 87% said they would, compared with 8% who said they would not attend again or 5% who were not sure. A paired-samples *t*-test confirmed that students' actual experiences (M = 2.36, SD = 0.57) were more positive than their expectations (M = 2.07, SD = 0.48), t (565) = -9.61, $p < .0001$, $\eta^2 = .14$.

Student Surveys. We administered surveys to sections of the FYS course that did and did not include the Passport program to evaluate differences in student engagement in their first semester of college. At the end of the Fall 2011 semester, students in 20 participating sections of the FYS (with 13 instructors) completed surveys indicating their attitudes toward and experiences in the university during the semester and their evaluation of the Passport program. The students completed a 15-item survey that contained 4 questions specifically about the Passport program and 11 questions about their attitudes toward and experience with campus involvement during their first semester. For example, an attitudinal item was "I felt involved on campus this semester." Response options included a Likert scale ranging from 1–5, which corresponded to *Strongly Disagree* (1), *Disagree* (2), *Neutral* (3), *Moderately Agree* (4), and *Strongly Agree* (5). See Appendices 1 and 2 for the specific items asked. Additionally, the survey requested demographic information including gender, age, major, housing (on campus, off campus with family, or off campus not with family), and academic rank (first-year, sophomore, etc.).

For comparison purposes, we asked 8 instructors (4 of whom submitted completed students surveys, representing 5 FYS sections) whose sections did not participate in the Passport program to distribute a survey to the students in their FYS which contained the same 11 attitudinal and experiential questions as the survey completed by the Passport students (without the 4 questions addressing the Passport program). These instructors were selected to make the nonparticipating group as similar as possible to the participating group. Because a possible confounding variable between students in participating and nonparticipating sections could be the commitment of the instructor to the FYS program (as it was the instructors' choice to participate or not in the Passport program), we identified comparison instructors who demonstrated a comparable level of commitment to the FYS program. All 4 nonparticipating instructors had attended a day-long faculty development workshop for the FYS the previous

summer (as compared to 10 of the 13 participating faculty), 2 of the 4 had previously taught in the FYS program (as compared to 8 of the participating faculty), and the courses were from a diverse range of academic departments including anthropology, education, biology, and computer science, as were the participating sections. The reader will note that students were not randomly assigned to participating or nonparticipating sections, and thus in this quasi-experimental analysis, no causality can be concluded. However, students were pre-enrolled in their sections and did not choose whether or not they were in a participating section.

Through this process we secured surveys from 336 first-year students, 217 of whom participated in the Passport program and 78 of whom did not participate. An additional 45 students completed surveys, but their data were excluded from analyses as they were either not first-year students ($n = 44$) or were over the age of 22 ($n = 1$). Students completed the surveys during the last week of the semester, either on paper during their class time or online, at their instructor's discretion. Demographic responses reveal that 53.6% of the sample were female and 44.6% male; students' average age was 18.26 ($SD = 0.47$); 79.8% resided on campus, 14.0% commuted from the family home, and 0.6% lived off campus not with family; and almost all (97.6%) were in their first semester of college, with the remaining students in their second semester of college.

Two sets of analyses were conducted on the student survey data. First, participating students' responses were examined regarding their evaluation of the Passport program specifically. We examined the means and standard deviations as well as frequency distributions for the four items specifically addressing the Passport program (see Appendix 1). Students tended to report that the Passport program led them to attend events they otherwise would not have attended; 55% agreed while 25% disagreed. However, in contrast to the positive experiences they described in their Passport documents, their explicit attitudes toward the program were less positive. Many students did not perceive the program as valuable (only 21% agreed; 48% disagreed) or as one that should be required by all FYS sections (21% agreed; 57% disagreed), instead tending to view it as a waste of time (44% agreed, 31% disagreed). Note, however, that the frequency distributions show quite a variety of opinion on these issues, showing diversity in student opinion.

These responses can be best understood in the context of student comments about the Passport program. Students had the option of responding to an open-ended item that asked "Please write any suggestions for improving the Passport Program here." The 39 responses were coded into one or more categories. The most common comment ($n = 20$) suggested that the program should be optional, extra credit, or otherwise not affect the course grade. The next most common comment type ($n = 16$) indicated difficulty with attending campus events due to commuter status, work schedule, or other commitments. Other frequent comments were that there should be some choice among which events to attend (e.g., four of the five categories) from 12 students; 9 stated that students should not be forced to attend events; and 3 suggested greater dissemination of information about upcoming events. Positive comments were made by 14 students and an additional 14 comments did not fit into the above categories. Overall, these

comments suggest that students perceive a lack of rationale for the program and would appreciate some flexibility in requirements.

Students' relatively negative explicit attitudes about Passport program stand in significant contrast to the results of the second set of analyses on the student surveys, which compared participating students' to nonparticipating students' campus involvement and attitudes toward the university. We conducted a series of independent-sample *t*-tests to evaluate the remaining 11 attitudinal items, comparing responses from students who participated in the Passport program to those who did not. As can be seen in Appendix 2, students who participated in the Passport program were more likely to agree that there are many interesting things to do at the university; that they know where to go on campus for various events and know a lot about support resources on campus; that they were regularly involved with at least one student organization during the semester; and they were less likely to agree that the university is boring and that they expected to be more involved on campus than they actually were, all *p*s < .05. Participating and nonparticipating students did not differ significantly on whether they plan to graduate from the university, whether they are glad they attend the university, whether they think campus involvement is important, and the degree to which they had numerous meaningful conversations on campus with faculty and staff, all *p*s > .05. Thus, although students did not tend to report that they enjoyed the Passport program on the survey, students who participated in the Passport program reported greater campus involvement and greater campus knowledge than did students whose sections of the FYS did not participate. These results were replicated in fall 2012 when we surveyed 236 students who completed the Passport program and 203 students who did not, following the methodology of fall 2011. As shown in Appendix 2, five of the seven significant differences were replicated again in fall 2012. These results demonstrate that faculty who included the Passport program in their FYS had students who, by the end of the semester, indicated that they were more knowledgeable about a campus, which they also perceived as more interesting, as compared to students from FYS courses that did not include the Passport program.

In the Words of Students. To further illustrate the value of the Passport program, we include now the experiences of some students in their own words. As described above, students' explicit attitudes were not always as positive as we would hope or as their more objective outcomes would imply. However, their experiences tend to be described in positive (as opposed to neutral or negative) terms, and they state they would attend again in the vast majority of cases (83%–87%). What are these experiences that students are getting because faculty include the Passport program in their course? A sampling of student entries from the event-recording Web site (fall 2014) follows:

> *A Study Abroad Information Session:*
>
> I expected this event to have a lot of great information about studying abroad. . . . I learned that it is not only possible for me to take classes . . . but it is also possible for me to take an internship in another country for my major. . . . I plan on attending informational events like this in the future because there is always something new to learn about Rowan. Rowan

University offers so many great opportunities to its students and it is important to take full advantage of them.

A Meeting with a Professor:

Stayed after class and talked to Professor X about an oral presentation. . . . I was nervous to approach my professor and hoped she would be inviting and sincere. Professor X was very social and inviting, contrary to what I thought might happen. She was eager to listen and offered wonderful ideas/insight into the assignment. I learned that professors are really there for you to succeed. I definitely will approach professors more in the future because Professor X was so helpful and understanding.

Informal Welcome Session with the Dean's Office:

An invitation to meet the College of Education Dean's office staff. . . . I thought it was going to be small and a lot of staff members. I was wrong, there was a lot of hungry college students and only two staff members who were greeting. . . . I met the Deans of my major, elementary education. They were so psyched to meet me and were shocked when I didn't take a pretzel or drink, but that I actually went to the event just to introduce myself. . . .They seemed like very nice people and I am happy I met them, and I'm sure I will love my major. . . . I think it's very important to meet your advisors or Deans for your major. It'll help you out. You will feel happier at school and you will always have them if you have any questions or are confused.

Academic Department Club Meeting:

This was a welcome reception hosted by the Philosophy and Religion Department's Student Club. I expected this to be a lot like a high school club meeting, where everyone just sits around in a classroom and doesn't actually do anything except talk to their peers. I actually really enjoyed myself. There were a lot of people from the philosophy department there to give you helpful insight. I was able to actually talk to my Professor and he gave a lot of helpful advice with classes to take and possible major options. It was cool to learn about the philosophy department and how much philosophy actually ties into everyday things. I learned that the Professors and departments really are there to help you and guide you. . . . I think it's a cool way to learn about the different departments and see how they may actually benefit you in the long run. It's also an easy way to get involved.

Physics Club Meeting:

> Physics Club Pizza Party [for] members of the physics club and those interested in joining. . . . I was terrified out of my mind and didn't know much of anyone, but there were quite a lot more people there than I expected. However, although it was awkward at first, I met a new friend who felt the same way and was able to talk to quite a few people. It was far from boring and I learned a lot of new information about the club and events. People who share the same interests as you really are easy to talk to. Clubs like these can make you feel at home, because everyone instantly has a common interest that they can talk about. Yes, I plan to attend events like these in the future. I hope to make more friends there and to become a part of the family, if possible, and I think it is very possible.

Sought Assistance at the Writing Center:

> Attended two sessions at the writing center. I expected the session to be just strictly writing but the tutor, [name], was very informative with anything we asked him. The tutor was very helpful and will continue to help me with my papers this first semester. I learned that if you are indeed struggling Rowan gives a lot of options for help.

Lessons Learned and Conclusion

Toward the goal of leveraging the power of faculty to engage their students in co-curricular programming, and at the behest of the faculty advisory board for our FYS program, we developed a Passport program that faculty could choose to adopt for their FYS sections. Taken as a whole, the data support the efficacy of the Passport program for integrating first-year students into the campus community, as indicated by students' evaluation of their experiences at specific events; attendance at events they otherwise would not have attended; and when compared to students from sections of the FYS which did not participate, greater perceived knowledge of campus resources and higher reported campus involvement. However, as indicated by comparing instructors' and students' explicit ratings of the perceived value of the program, although instructors saw considerable value for their students, the students themselves tended to not.

In light of these overall positive findings, we have continued to make the Passport program available for adoption by faculty teaching sections of our first-year seminar and have observed large increases in the number and proportion of participating sections (from 29 sections/33% to 95 sections/67%). However, we took seriously the frustration that many students experienced with the required event attendance. Review of student comments reveals a theme of disliking being told to attend campus events. Other work, however, has shown that students do value co-curricular involvement, including activities in the event types of the Passport program such as campus lectures and athletic events (Donohue, 2004; Kuh, 1995; Tieu et al., 2010).

Indeed, the only other published empirical investigation we found that addressed a similar program found positive student evaluation of the program (Camarena et al., 2006).

Some students' relatively negative explicit attitudes toward the program can likely be explained by two factors. First, students in our program as surveyed in fall 2011 did not seem to understand the rationale for the Passport program. This was likely compounded by the structure of our FYS, which are regular academic courses with college transition content infused. Students may not perceive adjustment to college as a central goal of the course, especially if their instructor did not emphasize it. This contrasts with Camarena and colleagues' (2006) program description, which was part of a one-credit FYS course specifically focused on the transition to college. This suggests the need for better communication to students (and possibly to instructors) about the importance of the college transition aspects of the FYS beyond the regular course content. Of utmost importance in future offerings of the program is to explain to students why this program is offered and how it can help them adjust to the university. We have since crafted a message to students that although the Passport program is another course obligation, it is one with measureable benefit to them as they become integrated into our campus community; faculty report reinforcing this message throughout the semester. Research suggests that student motivation will be strengthened when they understand the rationale for the assignment (van der Meer, 2012).

Second, we observed that some student frustration stemmed from a perceived lack of choice for the activities. Although the students had myriad choices for activities within each category, an activity from all five categories was required in fall 2011. Some students perceived it difficult to attend events due to busy schedules, living off campus, and so forth, and did not feel they should be required to attend events that did not interest them. We discussed these findings with the program's stakeholders (faculty advisory board, instructors, Student Affairs colleagues, etc.) and have since added flexibility to the program by allowing students to complete five events in four or five categories, so that they may skip a category if they desire. Student motivation is also greatly increased when they perceive autonomy and choice in their work (c.f. Camarena et al., 2006; Knight, 2008).

Suggestions for Implementing a Passport Program on Your Campus

Given our positive experience with the Passport program as part of our required academic first-year seminar, we share these suggestions with faculty who may want to implement such a program with their students.

- Although the program described herein is part of a larger faculty-developed university initiative, any individual faculty member would be able to achieve similar results by including campus event participation as a course activity. A homework assignment to visit one's academic advisor and then reflect on the meeting may catalyze students' engagement with advisement in the future. Attending a departmental club meeting for a few extra credit points may spur the

student to come back again, and may strengthen his or her ties to the discipline and to other faculty in the department.

- A campus-wide Passport program involves close collaboration with many faculty and staff. Co-curricular involvement that is coordinated between academic and student affairs is likely to be more impactful than if promoted by one side alone (Kuh, Palmer, & Kish, 2003). Converse with colleagues in both academic and student affairs for ideas regarding the goals and implementation of the program, especially the consideration of resource issues as attendance at some events will increase substantially; appropriate forms of documentation of attendance; and a coordinated system for notifying students about campus events. A program like the Passport program can create linkages between an academic FYS and co-curricular programming on your campus (Cuseo, 2010).
- Consider your degree of flexibility in activities permitted. Special considerations could include the needs of nontraditional and commuter students, who may find it difficult to attend events at certain times during the week; whether you wish to specify particular events or alter the number or type of events required; and how the program factors into the course grade.
- Be sure to offer faculty-development opportunities so that instructors are familiar with the value of the program and how to handle student concerns. Ensure also that faculty are aware of resources to find campus events, and encourage them to discuss the program often in class. Faculty can provide strong support to each other by sharing tips and experiences.
- Cultivate a student culture that celebrates the program. This can be facilitated by a social network presence such as a Facebook group, making visible students who are at an event via the Passport program (perhaps by the event coordinator asking for a show of hands), encouraging students to attend events together, and so forth.
- Include reflective writing as part of the program. Reflection provides a learning opportunity to deepen students' understanding of the importance of their campus experiences (Camarena et al., 2006; Donahue, 2004; Hubbs & Brand, 2010; Fiddler & Marienau, 2008). Anecdotally, some of our instructors spontaneously mentioned their joy at reading the students' reflections about their enjoyment and learning from the program.

Conclusions

We noted at the outset of this chapter that faculty can have a key role in the successful integration of first-year students into an institution through coordinated, intentional efforts to build students' knowledge of and relationship to the campus community (Chaskes, 1996; Hunter, 2006; Light, 2001). Important student development occurs via engaging in co-curricular activities on campus (Kuh, 1995; Tinto, 2012) and this chapter presents multifaceted empirical

evidence that a faculty-developed Passport program can facilitate such engagement. Faculty members can increase their students' knowledge of and engagement with the campus community via a Passport program.

Faculty who wish to adopt the Passport program in the future can benefit from our lessons learned. Note that faculty promotion of co-curricular involvement could be part of any course at any level, not just first-year seminars. Our results suggest that faculty should explicitly communicate the rationale for and efficacy of the program to students so that they can see the required events as valuable learning opportunities and not as busywork (van der Meer, 2012), and to provide flexibility so that students can enjoy their engagement rather than view it as an additional course burden.

We will continue to offer and expand our campus's Passport program in future years and to assess its benefits as well as ways to strengthen it further. In addition to the increased engagement the program brings to our students, it also facilitates productive interaction among faculty, administrators, and student affairs staff on our campus. Future assessment should also address continued improvement in student evaluation of the program and measure the degree to which the resulting heightened engagement promotes increased retention and graduation rates. The program and data reported here have broad implications for first-year experience programming and show that a coordinated campus effort can have a significant impact on student enculturation. In particular, in designing their courses, faculty have a real opportunity to impact their students' campus experiences much more broadly.

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Appendix 1

Table A1. Students' Explicit Attitudes: Percent of Student Responses in Each Category

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The Passport program led me to participate in events that I would not have participated in without the program. (*M* = 3.39, *SD* = 1.37)	15%	10%	20%	30%	25%
The Passport program was a valuable part of my semester. (*M* = 2.54, *SD* = 1.10)	22%	26%	32%	18%	3%
The Passport program should be a required part of every [FYS] class. (*M* = 2.34, *SD* = 1.33)	39%	18%	22%	13%	8%
The Passport program felt like a waste of time. (*M* = 3.24, *SD* = 1.33)	13%	18%	26%	21%	23%

Appendix 2

Table A2. A Comparison of Student Experiences and Attitudes as a Function of whether their FYS Section Participated in the Passport Program

Item	Passport (*M*, *SD*)	Non-Passport (*M*, *SD*)	Significance Test
There are many interesting things to participate in at Rowan University.** †	4.05 (0.94)	3.71 (1.11)	t (333) = 2.62, $p <$ .01
I know where to go on campus for different events.**	4.19 (0.84)	3.47 (1.03)	t (333) = 6.24, $p <$ .001
I regularly participated in at least one student organization on campus (sports team, academic club, arts ensemble, student government, etc.) this semester.* †	3.62 (1.41)	3.15 (1.52)	t (334) = 2.48, p < .05
Rowan University is boring.* †	2.10 (1.06)	2.47 (1.25)	t (334) = -2.51, $p <$ .05
I felt involved on campus this semester.**	3.47 (1.09)	2.95(1.20)	t (328) = 3.53, p < .001
Before the semester started, I thought I would be more involved on campus than I actually was.** †	2.97 (1.09)	3.45 (1.20)	t (329) = -3.29, p < .001
I feel that I know a lot about Rowan University's resources to support students. ** †	3.66 (0.93)	3.19 (0.91)	t (328) = 3.84, p < .001
I think it is very important to participate in campus events and activities during my time in college.	4.02 (0.96)	3.95 (0.97)	t (334) = 0.55, *ns*
I plan to graduate from Rowan University.	4.35 (1.12)	4.34 (1.04)	t (333) = -0.06, *ns*
I am glad that I attend Rowan University.	4.25 (1.02)	4.10 (1.08)	t (334) = 1.17, *ns*
I have had numerous meaningful conversations with Rowan University faculty and staff outside of class this semester.	2.96 (1.11)	2.97 (1.30)	t (334) = -0.07, *ns*

* $p < .05$
** $p < .01$
† Significant difference replicated in fall 2012 data

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Retention as a Grassroots Initiative: The Benefits of the Practitioner-as-Researcher Model for Engaging Faculty

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Over the past two decades, post-secondary institutions have studied the impact of retention efforts and determined that initiatives such as learning communities and first-year programs increase student retention (Tinto, 1997; Zhao & Khu, 2004). The evidence suggesting that well-designed programs can improve student success and retention continues to accumulate (Tinto, 1996). A parallel stream of research exists on the impact of faculty on student engagement and retention. Gregerman et al. reported as early as 1998 that student-faculty research partnerships can affect student retention. Umbach and Wawrzynski (2005) more recently observed that "the educational context created by faculty behaviors and attitudes has a dramatic effect on student learning and engagement" (p. 173). Research on the valuable role that faculty play in implementing retention is compelling. However, much of this research focuses on the institutional and program-level student retention initiatives at four-year or research institutions. There is less scholarly research—especially at the community college level where research endeavors are not a part of the job description—about what inspires a faculty member to become interested in retention efforts and engaged in retention research.

Given the potential impact of faculty on student retention, increasing our understanding of why faculty may choose to engage in student retention initiatives is important. In her article "Engaging Faculty in Retention: Finding Traction through Accreditation," Caryn Chaden notes that:

> At most institutions, faculty are rarely asked to think about their activities in light of institutional graduation rates. Traditionally, they have been hired to teach courses in their discipline, along with conducting research and service, and they have enjoyed the freedom to accomplish that task as they see fit. While many care deeply about the success of individual students, they typically have not been asked to consider what role they might play in improving institutional graduation rates, or what institutional impact coordinated efforts might have. (2013, p. 92)

Chaden suggests that in order for faculty to shift their thinking about retention, institutions must make it a higher priority for them.

Siegel (2011) points out that yet another obstacle in engaging faculty in retention initiatives is that many faculty members feel disconnected from the initiatives. In many institutions, retention efforts are analyzed by institutional researchers or academic support offices with little connection to the students or faculty members implementing those retention strategies. This approach is unlikely to garner the faculty buy-in required to reach retention goals. A possible solution to this problem is to invite faculty to design, deliver, assess, and revise the retention initiatives themselves. This type of grassroots approach increases the chances that faculty will be invested in the execution of the initiative and will be more likely to commit to its success. A natural extension of this ownership is faculty researching the outcomes of the initiative. Labeled as the practitioner-as-researcher model, "individuals conduct research about their own institutions, and by doing so they acquire knowledge that they can use to bring about change in these institutions" (Bensimon, Polkinghorne, Bauman, & Vallejo, 2004, p. 112).

Although faculty at four-year institutions are often involved in research, in most cases these research efforts are not aimed at retention assessment; in the community college setting, most instructors are not engaged in research of any kind. According to K. Patricia Cross, engaging in classroom research "encourages teachers to use their classrooms as laboratories for the study of learning" and to then implement changes to effect better learning for the students (1996, p. 406). The practitioner-as-researcher model closes the loop in faculty ownership of retention initiatives.

This chapter describes student retention initiatives at Northern Maine Community College that build on the idea of faculty participation in and ownership of retention initiatives. The chapter is divided into three primary sections: (1) an overview and examination of the context and initiatives, including results obtained when instructors engaged in retention efforts centered around three configurations of learning communities; (2) a discussion of the benefits reported by faculty members who participated in these communities and the assessment of them; and (3) recommendations for institutions to increase faculty engagement and commitment to retention initiatives.

The Case Study: Retention Initiatives at Northern Maine Community College (NMCC)

Utilizing a case study approach, one arts and sciences department at a community college in northern Maine was examined to better understand faculty perceptions of and participation in retention initiatives. Two questions were of primary interest:

1. How and why faculty were invested in implementing and assessing retention efforts at the college?
2. What can institutions do to encourage faculty to participate in retention strategies and support them once they are invested?

Answers to these questions could provide a framework to help other institutions foster faculty participation in retention. As research indicates, “Faculty do matter,” so it is of the utmost importance for institutions to foster an environment that compels faculty to involve themselves in retention initiatives (Umbach & Wawrzynski, 2005, p. 173). The size and geographic location of NMCC provided a microcosm to begin exploring these questions.

The Institutional Setting

NMCC, a Title III designated institution, is a rural, two-year community college serving approximately 1,000 students. Two of the three learning communities discussed in the next section were designed to address retention among NMCC’s Liberal Studies students, and the third was designed for conditionally admitted students in all programs. These student groups have been identified by the college as being at high risk for dropout or academic dismissal.

NMCC’s Liberal Studies program, which consists of 100- and 200-level general education courses, is intended for students who plan to transfer to a four-year school. The Liberal Studies program also houses students who do not intend to complete their associate’s degree in liberal studies but are pursuing a different educational path. For example, students wishing to pursue the college’s nursing degree frequently enroll at NMCC for one year as Liberal Studies students in order to complete their general education requirements and then apply for admission to the nursing program. Students who are waitlisted for trade and technical programs, students who attend part-time, and students who enter the college with an undeclared major are also placed in the Liberal Studies program.

The result of this amalgam is that students in the Liberal Studies program are at high risk for academic probation, withdrawal, or non-completion. For the fall semesters of academic years 2008–2014, the average percentage of NMCC students on the academic dismissal list was 3.7%; of that 3.7 %, Liberal Studies students made up on average 44.2% of the list. In two of the years (2009 and 2012), Liberal Studies students made up more than half of the fall semester academic dismissal list. These data form the foundation for identifying first-year Liberal Studies students as the population that would benefit most from retention intervention strategies.

Within this group of Liberal Studies students is an even higher risk group of students—Liberal Studies students who state that their primary educational goal is to transfer to a four-year program and who have also been identified as participants in the college’s TRIO/Student Support Services program. To be eligible for NMCC services provided by the federally funded TRIO/Student Support Services program, students must meet the grant’s guidelines for being low-income, first generation, and/or identified as having a documented disability.

The third group of students identified as being at risk during the first semester is comprised of conditionally admitted students, who can come from any program or department at NMCC. Students are identified as being conditionally admitted as a result of not meeting NMCC’s benchmark scores on the Accuplacer test, NMCC’s placement exam. There are four subject areas tested on the Accuplacer exam: Sentence Skills (Passing Score 51%, Raw Score

84); Reading Comprehension (Passing Score 50%, Raw Score 74); Basic Arithmetic (Passing Score 50%, Raw Score 49); and Algebra (Passing Score 50%, Raw Score 51). Conditionally admitted students typically complete developmental coursework during their first semester. This coursework is designed to help them improve their skills in deficient areas and improve their Accuplacer scores by the end of their first semester. The conditions of their acceptance are removed once they have successfully met the Accuplacer benchmark(s).

Three Learning Community Configurations at NMCC

Since 2011, NMCC has developed three configurations of learning communities to try to increase retention among those the college identified as high-risk, first-year students:

1. TRIO Learning Community. Beginning fall 2011, the college implemented a grant-funded learning community for Liberal Studies students in NMCC's TRIO program, a program that provides additional support to first-generation, low income, and/or disabled students.
2. College Success Course. In fall 2013, a one-credit College Success course was adopted as a requirement for all Liberal Studies students.
3. SMART Start Program. In summer 2014, an eight-week, one-credit SMART Start program was implemented for 21 conditionally admitted NMCC students.

The first initiative, implemented during the 2011–2012 academic year, focused on Liberal Studies students in the TRIO program who had identified transferring to a four-year program as their primary educational goal. These students were placed in a learning community of 10 to 15 classmates. Students in this group took three classes together each semester (an English class, a history class, and an extended two-semester College Success class). In addition, they took two or three other general education classes in which they were enrolled with the general population. These students were assigned two academic advisors (their learning community instructors) as well as advisors from the Counseling Office. Through funding provided by the TRIO/Student Support Services grant and institutional support, their learning community classes were paid for as a scholarship. To increase their connection to the college, these students participated with their instructors and counseling advisors in social and extended-learning activities including regularly scheduled lunches, visits to local four-year colleges, cultural events, day hikes, and other activities designed to promote community building.

The role of faculty in the TRIO Learning Community is multilayered. Because the initiative was developed by NMCC's TRIO/Student Support Services staff, faculty were first enlisted simply to instruct. Two faculty members in the Liberal Studies department were selected to be dedicated instructors for the community. Each semester, the instructors have the learning community students for a closed section of a gateway class. In addition, instructors participate in all learning community activities including supplemental instruction. Over the five years of the project, the participating faculty members have received professional development and have been integrally involved in every facet of the learning community, including:

- Adjusting the design of the learning community as needed
- Participating in social and extended learning activities
- Initiating changes in curriculum and community activities
- Contributing to the grant re-application process
- Providing academic advising to learning community students

It is worth noting that the two original instructors invited to participate in this learning community are still the dedicated instructors; this speaks to the level of engagement that involvement in design and assessment can provide.

The second learning community configuration, the College Success Course, focused on all entering Liberal Studies students. The intensive level of intervention provided through grant funding for TRIO students formed the foundation for the development of a less intrusive and more cost-effective model that could be used with the broader population of Liberal Studies students. The Arts and Sciences Department implemented a second intervention strategy in fall 2013 targeted at a wider population of Liberal Studies students. All entering Liberal Studies students were enrolled in a newly developed, one-credit College Success course. In addition, they were paired with a College Success classmate in one other class during their first semester. One of the main focuses of the College Success course is to help students identify future career or transfer programs, thereby clarifying their educational goals. The one-credit course is now a Liberal Studies program requirement for matriculating students with fewer than 15 credits.

These students do not receive the same level of support as the TRIO students, but the intervention strategy used with them has similar goals and was designed with an emphasis on encouraging students to reflect on their first-semester experiences and to adjust their behaviors for success. During the first year of the College Success course (2013–2014), 45 students were enrolled in five sections taught by three different Liberal Studies instructors (a math instructor, an English instructor, and an Early Childhood Education instructor). Based on the evaluation of this program after its first year and in response to changing enrollment, in the fall 2014 semester one Liberal Studies instructor taught three sections of College Success to a total of 26 students.

The idea for the College Success course originated in the Arts and Sciences Department and was owned by faculty at every stage. Faculty who developed, taught, and assessed College Success did so voluntarily. The curriculum for the class was created by faculty and approved at the department level by all participants prior to being adopted by the college's curriculum committee. Faculty members selected a common text, agreed on the essential content of the course, and delivered content utilizing their own teaching styles. Faculty participated in information sharing and debriefing after teaching the class. Once the course was adopted as a requirement for the Liberal Studies curriculum, the Dean of Students began pairing students enrolled in College Success in at least one other course. The shared ownership of the course by multiple faculty members, as well as the involvement of the Student Support Services office, created a strong partnership with buy-in from multiple stakeholders. The course continues to be evaluated and adjusted each time it is taught.

The third learning community configuration was an eight-week SMART Start program designed for conditionally admitted students. The program was funded through a grant awarded by the Maine Community College System and was designed by NMCC's Dean of Students and the Arts and Science faculty member who taught it. Made up of 21 conditionally admitted students, this learning community had four goals:

1. Assist conditionally accepted students in building math and reading skills
2. Prepare conditionally accepted students for the rigors of a college experience
3. Enroll conditionally accepted students in the Fall 2014 semester
4. Retain conditionally accepted students in the Spring 2015 semester

The program was delivered during summer 2014, before these students entered their first semester at NMCC. The curriculum for SMART Start was based in part on the existing one-credit College Success curriculum with the addition of math and English basic skills reviews. Students enrolled in this program met with one Arts and Sciences faculty member three hours per week for eight weeks. Students involved in this learning community each received a Kindle Fire HDX, a LiveScribe Bundle (pen, ear buds, and four notebooks), the e-book *Your College Experience* by John Gardner and Betsy Barefoot, and a $20 gas card each week.

Like the faculty members involved in the other learning communities at NMCC, the faculty member who taught the SMART Start program was involved in each step of the initiative: design, delivery, and assessment. This program, like the other learning communities at NMCC, relied on a partnership between faculty and the Student Support Services office. At the end of SMART Start, the faculty member evaluated the program and tracked the students through their first semester.

Faculty-Led Assessment of Retention Initiatives

To explore the impact of these three learning communities, faculty members gathered and evaluated data that would indicate whether or not the intervention strategies were effective. Faculty members examined data in two ways: (1) a comparison of retention rates for the target population (TRIO and College Success students) and NMCC's general population over the course of seven years, and (2) a comparison of GPAs and retention statistics for SMART Start students and all conditionally admitted students over the course of two semesters. Although still early, data suggest that NMCC's learning community efforts are increasing retention numbers and enhancing the college experience for first-year students, at least in the short term.

Ongoing academic eligibility is one way to evaluate the success and continuing viability of the Liberal Studies retention initiatives. (Eligibility and retention are closely related, although some eligible students do not re-enroll.) To determine first-semester success for the TRIO and College Success learning communities, faculty members used eligibility to re-enroll as the measure of success. They examined three fall semesters (2008–2010) of longitudinal academic dismissal data to establish a baseline for the college's Liberal Studies students. The information was then compared to the data for the 2011–2014 academic years, when first the TRIO Learning

Community and then the College Success cohorts were established. The goal of this assessment was to identify whether Liberal Studies students enrolled in the learning communities were retained at a higher rate than past groups. Though it will require several years of data to determine the effectiveness of the program, preliminary analysis indicates some positive results.

Table 1 provides a comparison of academic dismissal rates for all NMCC students, Liberal Studies students, and students participating in the TRIO Learning Community. The Liberal Studies Students column (the middle column) includes all Liberal Studies students. This group includes students enrolled in College Success for the years 2013 and 2014 as well as all other Liberal Studies students at the college. While the majority of the group are students who had participated in College Success, included in the mix are also a handful of second-year students or students who entered with 15 or more successful credits and were not required to take the College Success course.

Table 1. Fall Semester Academic Dismissal (AD) Rates for Liberal Studies Students

Year	All NMCC Students on AD List Fall Semester		Liberal Studies Students Percentage of AD List Fall Semester		TRIO Learning Community Percentage of AD List Fall Semester	
	Number	Percent	Number	Percent	Number	Percent
2008	49	5%	17	35%	--	--
2009	37	3.3%	19	51%	--	--
2010	47	3.9%	20	43%	--	--
2011	37	3%	16	43%	6	18%
2012	46	4%	24	52%	1	2%
2013	51	3.1%	20	44%*	4	8%
2014	38	3.5%	16	42%*	0	0%

* 2013–2014. Mandatory College Success course for all new Liberal Studies students and entering Liberal Studies students transferring fewer than 15 credits.

The TRIO Learning Community students seem to be significantly benefiting from their intervention. The reduction in academic dismissal for TRIO students versus the overall population of Liberal Studies students strongly suggests that the TRIO Learning Community yields positive results.

Looking at overall retention numbers also suggests these interventions may be having a positive impact on the larger population of Liberal Studies students. The Liberal Studies cohort group for 2013 shows an 8% decline in percentage of students on the academic dismissal list (from 52% in 2012 to 44% in 2013). There was a further 2% decrease in 2014 for the Liberal Studies cohort. Although the decline in students on the academic dismissal list was less dramatic in the second year of the initiative, this number becomes more significant when examined against the increase in percentage for the entire school population on the academic dismissal list for Fall 2014. Between 2013 and 2014, the overall number of students on the Academic Dismissal list increased from 3.1% to 3.5%; however, the percentage of Liberal Studies students in that group decreased. If this trend continues over time, it may indicate that the College Success course is having a positive impact.

The SMART Start program, designed for students to complete during the summer prior to their first semester at NMCC, also demonstrated positive results. The evaluation of the SMART Start program was twofold: a comparison of GPAs between SMART Start students and all Conditionally Admitted students for one semester (Fall 2014) and retention percentages for these two groups into the Spring 2015 semester. Though there is only one semester of data, the results indicate that the SMART Start program had a positive impact on the affected student group. Table 2 summarizes the SMART Start program outcomes.

Table 2. SMART Start Program Retention Rates and Success (Summer 2014)

Goals	SMART Start Students		All Conditionally Accepted Students	
	Number	Percent/GPA	Number	Percent/GPA
Enrolled in Fall 2014 semester	18	--	66	--
Finished fall semester in good standing	16	89%	33	50%
Average GPAs	18	2.03	66	1.95
SMART Start students who completed the semester average GPA	16	2.30	--	--
Retained into Spring 2015 semester	14	77%	43	65%

The objective of this evaluation was to see whether the SMART Start program led to the retention of conditionally accepted students at a higher rate. Of the 18 students who persisted in the program (21 students started the SMART Start program), seven (39%) achieved a passing mark on the re-take of the Accuplacer and were able to advance to the next level, either a

developmental course or college-level course. Even the students who were not able to meet the Accuplacer cut-off score made significant gains in their percentile scores. The average gain was 17 percentile points.

Thirteen of the 18 (72%) persisting students earned a passing grade in the one-credit, COL 103 College Success course. The instructor noted marked improvement in students' writing skills based on journal entries that were assigned throughout the program. Sixteen of the 18 students enrolled in the Fall 2014 semester, and 14 of the 18 students persisted to the Spring 2015 semester. These numbers are significantly higher than those of conditionally accepted students who did not take part in the SMART Start program.

Why Faculty Invest in Implementing and Assessing Student Retention Efforts

Although the student benefits of some retention initiatives, most notably learning communities, have been highly researched and documented, research about the impact of retention activities on faculty members is relatively new, especially at the community college level. Understanding such benefits may help institutions by acting as an incentive for faculty members to participate in retention activities, thereby promoting the institution-level changes required to make student retention a priority. Preliminary research at NMCC suggests that participating in retention activities, specifically learning communities, benefits faculty in a number of ways.

Jackson, Stebleton, and Laanan (2013), in their article "The Experience of Community College Faculty Involved in a Learning Community Program," identified four main benefits to faculty in their study: "(a) creating empathy and greater awareness, (b) building authentic student relationships, (c) engaging in the larger campus community, and (d) promoting active collaboration and professional development with other faculty members" (p. 9). These four benefits created a greater sense of job satisfaction for the faculty members involved in the NMCC retention initiatives.

Another widely reported element of job satisfaction for community college faculty is student success. Faculty want to work with students who are engaged, who are focused on their education, and who make progress. John Murray and Sean Cunningham (2004) conducted a study to determine what attracts faculty to rural community colleges. In the article "New Rural Community College Faculty Members and Job Satisfaction," they report that "overall the participants reported high levels of satisfaction with their roles as community college instructors. When asked what brought them their greatest satisfaction, both male and female faculty members often stated it was working with students" (2004, p. 28). This aspect of faculty engagement and satisfaction seems to be enhanced when faculty couple instruction with dedicated retention activities and assessment measures as is done under the practitioner-as-researcher model. The interviews with participating faculty members at NMCC corroborate these findings.

Practitioner-as-Researcher Model

Three faculty members volunteered to participate in the practitioner-as-researcher model as described by Bensimon, Polkinghorne, Bauman, and Vallejo (2004). They collected data and examined the effectiveness of retention initiatives. Two of the faculty members engaged in the evaluation of the learning communities were actual instructors in the learning communities; one of the researchers was not an instructor in any of the learning communities.

Their rationales for volunteering to research the effectiveness of the retention strategies encompassed five goals:

1. Understand and expand knowledge base of what classroom measures are successful in retaining students
2. Hone personal research skills to better aid students in their research endeavors
3. Serve as examples of lifelong learners
4. Support the success of NMCC's Liberal Studies program by working toward increased retention of students
5. Engage in scholarship

When asked about their motivation to engage in retention research, these three faculty members expressed a desire to better understand how to engage and motivate students as a driving force. In addition, all three felt that their research initiatives made them more dynamic educators. One practitioner-as-researcher commented:

> We ask our students to engage in research activities, but at the community college level, we, as professionals, are often quite removed from the actual research process. By engaging in retention assessment research endeavors, I feel like I am experiencing some of the research conundrums my students encounter. I can actually assist them on a more practical level as a result of putting myself in a new role.

Another faculty researcher described how the new skills she picked up doing retention research allowed her to better advise students in utilizing new technology in their research and presentation of material.

When asked, every faculty member engaged in retention activities at NMCC attributed personal growth and more job satisfaction to their participation in retention endeavors. These responses suggest that if faculty members are invited to create, assess, and participate in retention strategies, it could shift their opinion about the integral nature of retention, resulting in them believing that student retention is central to their role.

Faculty Participants' Views on Retention

Faculty participants in NMCC's recent retention initiatives were asked to describe their views of student retention by completing a series of six open-ended interview questions in an anonymous

online survey. It is important to remember that all of the respondents were full-time Arts and Sciences faculty members who voluntarily participated in retention strategies. Their responses revealed several themes that demonstrate how faculty perceive institutional retention initiatives and their participation in those activities.

When asked about their motivations to participate in the retention activities at NMCC and the resulting benefits, faculty members reported a deeper awareness of their students' situations and more rewarding relationships with them. In the words of one faculty member:

> I really enjoyed the [College Success classes] as I was able to instruct students outside of my program. Many of these students had varied and amazing backgrounds, but little understanding of their own learning styles or the "common" things that you would (mistakenly) assume that people of this age would know—time management or costs of living—and for the most part, they were agreeable and eager. Each of these classes was well attended (few attendance issues), and several students were able to make gains in their college career, e.g., getting into their desired program. Most beneficial for me was the opportunity to use various teaching strategies to connect with these learning style–varied learners.

This faculty participant identifies the opportunity for getting to know individual students as a central benefit of teaching College Success. These relationships, and the resulting opportunity to watch students grow and succeed, were a common thread through the interview responses.

Similar sentiments are echoed by an Arts and Sciences faculty member who was an instructor to the TRIO Learning Community:

> I am a teacher and I want my students to learn. Two of the main obstacles to learning are isolation and lack of mentors. When it became clear to me that Liberal Studies students lacked a cohort to bind them together as a learning community and they were not connecting to their advisors in a way that was meaningful, I seized the chance to make it happen. As a teacher, I am in a helping profession and this project has put me into a position where I can help those who are willing to be helped. Finally, I enjoy the faculty-student relationship. I benefited from good faculty mentors when I was an undergraduate and I would like to pass it on. I enjoy the relationship that I have with my Liberal Studies advisees; I enjoy working closely with students as they learn and advance toward their educational goals. Participation in the TRIO project has also helped me to better understand the obstacles that students face and put me in a position to make a meaningful contribution to the overcoming of those obstacles.

This response demonstrates that helping individual students overcome obstacles is rewarding and can also help faculty members recognize larger trends in their institutions, as evidenced by this respondent's desire to address an issue shared by Liberal Studies students as a group.

Finally, the faculty member who helped design the SMART Start program cited connecting with students as a benefit, as well:

> I agreed to participate in SMART Start because I know how important making personal connections with students is, when it comes to retention. Those personal connections are the benefits for me. When [the Dean of Students] and I met with some of the SMART Start students to debrief at the beginning of the spring semester, he commented that it was evident how "connected those students are to you." That's the name of the game for me. For some of our students, who haven't had a lot of successes in life, just breathing belief into them is enough for them to persist.

The rewarding relationships faculty members were able to experience with students may have helped shift their thinking about student retention at an institutional level. Understanding this may be helpful for institutions that need to engage faculty partners in retention strategies.

Faculty Participants' Views on Job Responsibility

These same faculty participants were asked whether or not they perceived retention as a primary job responsibility. Not surprisingly, faculty members who participated in retention activities did feel that it was a primary job responsibility. One faculty member wrote, "Helping students succeed includes retaining them." Another stated, "Retention is an extension of faculty members' teaching responsibilities. Faculty are responsible for ensuring that students are engaged and are more likely to understand the content being presented. When this happens, retention naturally follows." If the majority of faculty members at an institution echoed these sentiments, it could result in a powerful impact on retention and graduation rates.

Furthermore, because the faculty members in this case study felt that retention was a central focus of their job, their course design and classroom practices were impacted. The participants in NMCC's retention initiatives identified several course-level retention strategies that they now employ across their courses to support student retention:

- Attendance—provide clearly stated attendance policies; award points to students for attending class and participating rather than taking away points for missed classes; incorporate attendance as a graded portion of each student's course average
- Assessment—emphasize objective forms of demonstrating knowledge; utilize competency-based testing; use high feedback/low stakes assignments at the beginning of a course so all students can experience success
- Content Management—provide a greater breadth of online resources for coursework; offer supplemental materials for students who need additional instruction
- Relationship Building—engage in frequent contact with students; build one-on-one time into courses through conferences; encourage student-faculty communication; increase advising efforts through consistent meetings and contact

These course-level retention strategies, though powerful in the effect they have had on student-faculty relationships, have not increased the faculty workload. Instead, faculty initiated small changes to better facilitate student learning. These initiatives are emblematic of an evolving view of teaching tenets at NMCC.

Faculty Participants' Views on Teaching Philosophy

The two faculty members who participated in the TRIO Learning Community reported the highest level of across-the-board changes in teaching philosophy and strategies. This suggests that when faculty focus on course retention initiatives in one area or project, it has an influence on their teaching practice overall. The TRIO Learning Community has been and remains the most intensive and long-lasting strategy employed at NMCC. It involves contact with the students three days a week for two semesters and requires a high level of cooperation with staff from the college's Student Support Services office. Perhaps the design, itself, of this community is what has encouraged significant change in the faculty members. One TRIO Learning Community instructor stated:

> TRIO work has made me aware of the myriad of problems students encounter and has given me the opportunity to work more closely with that group to make sure they succeed. . . . TRIO makes opportunities to work one-on-one with students on their educational goals and their individual coursework challenges. This is a model we should follow for all of our students.

A similar sentiment is echoed by another learning community instructor, who shared:

> Through my work with the TRIO program, I have learned more about retention strategies and how to promote retention through course design and delivery. I have tried to redesign all my courses to incorporate results that have been proven to retain students. . . . I have tried to get to know my students better as individuals, and enter into conversations with them about their overall college experience and goals, rather than just engage them in class-specific material.

The introspection instructors experienced participating in these three learning communities affected their views on job satisfaction and teaching philosophy; in addition, faculty members found this closer interaction with students allowed for a deeper understanding of student needs.

Faculty Participants' Views on Student Feedback

Half of the faculty participants who completed the survey report evaluating their retention strategies through the use of student feedback. The faculty member responsible for the SMART Start program tracked participating students through their first semester at NMCC and then sought feedback from them about the summer program. The TRIO faculty participants are

similarly engaged in reviewing feedback and outcomes to improve student retention. There seems to be a connection between faculty participating in retention initiatives and then, as a natural extension of the initiative, seeking student feedback and evaluating their interventions with the goal of improved performance. While making changes in response to student feedback is not unique to faculty members who participate in retention activities, it further illustrates the importance these instructors place on students' experiences in their classrooms.

One faculty participant nicely captured the essence of faculty involvement with retention activities:

> We can be the first line of defense in losing students. Working to create cohort groups and allowing for "personal" interactions such as the instructor taking time to learn the names of the student's children, or where they work or their most effective learning style—as shared by the student. The decision to teach adults is one that is often intertwined with the reaching of the student who may have unpleasant memories of past schooling and making sure that each student understands that your classroom is a safe, welcoming, and encouraging environment.

The themes suggested by faculty members involved in these retention initiatives showcase the positive repercussions that result when departments pool their resources to reach retention benchmarks; students and faculty alike benefit. The ripple effect within an institution could be powerful.

Recommendations: What Institutions Can Do to Encourage Faculty to Participate in Retention Strategies

If faculty members who participate in retention strategies display more concern for student retention and shape their practices around retention, institutions will benefit from engaging them as partners. Based on the documented benefits to instructor job satisfaction, more faculty might be inclined to be involved in retention efforts if institutions promoted these attributes of retention to faculty. "Historically it has been the domain of the administrative function to study retention problems on campus and devise intervention strategies and initiatives to help bolster student persistence, but faculty have an important role to play in student learning and satisfaction and, therefore, in student retention" (Siegel, 2011, p.16). The more faculty members who are engaged, the more likely the institutional culture around retention is to change. Rather than it being the focus of one office or program on campus, an awareness of retention issues would be diffused among all campus members. According to Michael Siegel (2011), it all comes down to perception. Institutions need to "reimagine the retention process. . . . Retention is everyone's problem. It follows that it can be everyone's solution" (p. 8).

From our interviews with NMCC faculty members, it appears that one key to engaging faculty as partners in student retention may be to make retention strategies appealing to them. The following section suggests ways to promote faculty participation in retention initiatives.

Educate Faculty on Why Retention Matters

In today's educational climate it is no longer a positive for an institution to boast about its "killer courses." All faculty need to realize that retention is everyone's job on campus. One way to begin this reeducation process is to

> Multiply the loss of students times the number of years they are not retained times the fees they would have paid. The dollars add up fast. The sheer magnitude of the dollars involved will change perspectives on the need to address student retention issues. (McLaughlin, Brozovsky, & McLaughlin, 1998, p. 5)

Tying these lost dollars to specific things, such as technology purchases or professional development funds, could have a dramatic effect. For example, if an institution loses 5% of its incoming class after the first year, showcase to faculty what that means in terms of program and personnel cuts. Helping faculty become more aware of the financial consequences of attrition could help connect them to their institutions' retention priorities and make them more effective in the classroom.

Department meetings are another meaningful venue to start incorporating faculty in the retention discussion and to begin reshaping the mindset some faculty have that retention is not "their problem." Having faculty share strategies they use in the classroom to retain students can begin the process of empowering other faculty to take ownership when students fail to persist. Some faculty don't even recognize what types of retention efforts they could be doing. Having faculty share successful retention techniques in a workshop format would be another positive step.

It is important to let faculty know that retention efforts do not have to be large, sweeping programs but could be small classroom initiatives like starting the semester off with easier assignments so more students experience early success and become invested. Planning workshop days where faculty from various departments can share their retention efforts can also inspire other faculty members to alter some of their teaching tactics. Surveying faculty about teaching practices that are successful in their classrooms and posting electronically the survey results would allow faculty members to see what their colleagues are doing at very little expense to the institution. Incorporating professional development opportunities around retention topics and promoting these events through conference attendance or webinars allows an institution to educate its faculty about what other institutions are doing.

Professional development is an important aspect of educating and partnering with faculty on retention initiatives. Institutions may prioritize professional development funds for retention activities or require on-campus professional development in the area of retention. A financial commitment on the part of institutions underscores the importance of retention, and some faculty may respond to the incentive of additional professional development. As an institution, NMCC supported faculty involved in retention initiatives by providing funds for professional development. Especially at the community college level, where faculty don't necessarily have an

opportunity to build a sense of community with instructors at other institutions, administration needs to recognize that it is critical for faculty to be exposed to different views of retention practices.

Enlist Faculty as Partners in Student Retention and Acknowledge Their Expertise

With the three learning communities developed at NMCC, faculty were involved in every step of the process. For each one of these learning communities, changes were made for future iterations by the faculty directly involved in teaching the material. Rather than receiving mandates from administration on what the retention initiatives should look like, faculty are more apt to take ownership when they can personalize the retention strategy to complement their teaching style. Allowing faculty members to own retention initiatives will increase enthusiasm and commitment.

Institutions trying to engage faculty in the retention cause must provide a tangible benefit to the faculty members involved. Faculty participation in retention activities may increase when it is not something added to an already-burdened faculty. Especially at the community college level, where faculty usually teach five courses a semester, in addition to advising and sitting on committees, the thought of doing anything extra is almost prohibitive. In the faculty world, tangible benefits might include release time, a stipend, or a lighter teaching load; such incentives could increase faculty members' interest in participating in retention initiatives. With tightened budgets at institutions across the country, though, lighter teaching loads and/or more money are not always an option. Less expensive ways to acknowledge faculty involvement in retention could take the form of faculty or departmental recognition through the campus communications office. Attempts could be made to utilize alumni foundations to create mini-grants to fund faculty-led retention efforts (Siegel, 2011).

Encourage the Practitioner-as-Researcher Model for Faculty

Some studies indicate that there is a positive correlation between the research-teaching nexus (Prince, Felder, & Brent, 2007). Faculty are on the front lines of what is going on in the classroom; they are also "most directly able to actually do something to improve learning" (Cross, 1996, p. 404). These faculty researchers are also inherently creating a community through their research: "Classroom research provides a stimulus to forming a community around the mission that all colleges and universities share, and that is teaching" (Cross, 1996, p. 407). These sentiments were echoed by one NMCC member who said that "since working more closely with my colleagues to incorporate and evaluate retention strategies, I feel a stronger sense of connection to my department." This, again, illustrates that researched classroom initiatives help faculty align their practices and values with the larger goals of their department or institution.

Faculty members who participate in retention activities should be encouraged to assess and report on their experiences; they could be encouraged to share results with their department, division, campus, or system. These faculty researchers may also choose to present findings at local or national conferences. The value of campus-level retention data to an institution cannot be underestimated and should, therefore, be supported:

> As they engage in learning with other faculty from other fields of study, they learn more not only about those fields, but also about their own. Equally important, they learn more about teaching in ways which enrich their teaching. The consequence for some faculty, as it is for some students, is a revitalization, a rediscovery of the joy of engaging with others, faculty and students alike, in learning. (Tinto, 1998, p. 175)

At NMCC, faculty involved in retention initiatives have presented to their colleagues during professional development days. In one case, this resulted in another department adding a one-credit College Success–style course geared specifically for students in their majors.

Use Faculty to Model Retention Practices and Recruit Additional Faculty Participants

For colleges with faculty mentor programs already in place, there is an opportunity to select mentors with retention in mind. By choosing faculty members who are invested in retention as mentors, it ensures that the culture of retention will be reinforced and maintained. An opportunity also exists to provide existing faculty with a "retention mentor" and thereby to encourage faculty who are curious about best practices and retention initiatives to work with faculty who participate in retention strategies. For some faculty, this peer-to-peer mentoring will be the most powerful method of engagement. At NMCC, the full-time faculty is a small group; the Arts and Sciences Department only has eleven full-time members. Six of those members were engaged in the retention strategies described in this paper. These faculty members mentored one another through sharing experiences and, in addition, brought their knowledge to colleagues in other departments formally and informally.

Faculty may be more likely to participate in retention activities if they are approached by other faculty members. This may be more persuasive than an administrator or staff member requesting participation in retention initiatives. If a faculty member sees that the initiative is valued by a peer and therefore worth the additional time and effort, he or she may be more likely to participate. Faculty recruiting faculty could result in stronger buy-in, creating the sense of a "ground up" rather than a "top down" approach to retention on campus.

Select faculty partners who are energetic, engaged, and already care about retention. By engaging a handful of energetic faculty members to participate in well-designed, meaningful retention initiatives, excitement about the practices can spread to other faculty members. Smaller scale activities also lend themselves to assessment and modification, increasing the chances that potential problems can be solved before rolling the initiative out to an entire faculty—one large-

scale mishap could result in negative faculty perceptions that are difficult, if not impossible, to repair.

Conclusion

Even with institutional and faculty shifts in thinking about retention, what is it that encourages faculty to buy into retention initiatives and participate in researching their effectiveness? Answering this question is important in that institutions can provide disincentives as well as incentives for faculty engagement. Unfortunately, at some institutions, retention initiatives such as learning communities have become merely "add-on" courses (Tinto, 2007). This is problematic for several reasons. First, "add-on" courses are not likely to engage faculty in retention initiatives. Second, given the current climate of financial constraints and increased accountability, institutions need to approach retention in a more comprehensive manner. According to McLaughlin, Brozovsky, and McLaughlin:

> Changing long-held views within an organization concerning the importance, or lack of importance, that should be placed on student retention as a strategic issue begins with individual stakeholders. Over time, efforts to impact stakeholder perspectives result in changes in organizational culture and in new approaches for dealing with strategic issues. (1998, p.3)

Change at an organizational level will be required for institutions to address student retention in a meaningful way.

All stakeholders must be a part of retention efforts for institutional change to occur. In order for institutions to increase their retention levels and establish new retention benchmarks, it will be imperative to engage their largest stakeholders: the faculty (Siegel, 2011). To better understand student retention from a strategic point of view, it may be beneficial for faculty members to change the perception of their role from the traditional view of disseminators of information to that of being participants involved in a commodity exchange. If the customer (the student) is not happy, that customer may either seek educational services elsewhere or leave school altogether. Both alternatives, transferring or dropping out, have significant financial repercussions (Jamelske, 2009; Siegel, 2011). Although the idea of "student as customer" may not be a perfect analogy, it is important for faculty members to realize that their performance in the classroom does impact an institution's bottom line.

Each institution is unique and there is no "one size fits all" approach to the retention problem. However, even the limited information presented in this paper demonstrates that it is possible to engage faculty members meaningfully as stakeholders in retention efforts, and that these efforts do have a positive effect on both faculty and students. To begin making positive change both in retention rates and in faculty perception of retention, this case study showcases that small changes may reap valuable dividends. For faculty members at NMCC, the key was ownership of retention strategies. Instilling a grassroots mentality allows for an organic practitioner-as-researcher model that encourages faculty members to be invested in the results.

This ownership was reiterated in terms of job satisfaction as a recurring benefit for faculty participants and should not be underestimated as a possible driver of faculty participation. The enhanced relationships between faculty and students as well as among participating faculty and staff has the potential to be a catalyst for shifting an institution's culture around retention.

This small study invites the question: if all faculty members were invested in retention, could institutions meet their retention targets? To answer this question, understanding faculty's perception of retention initiatives will be key. At NMCC, faculty researchers plan to build off of this anecdotal case study of the Arts and Sciences department members and develop a college-wide faculty survey that will be used to quantitatively assess relevant retention questions: What role do faculty believe retention plays as part of their job? Is it possible to shift faculty attitudes toward retention? What are the most effective means to do so? Questions such as these merit further consideration to understand how faculty fit into the retention puzzle.

This case study at a rural community college in northern Maine underscores the notion that faculty need to be a part of the retention equation. Faculty are in a unique position to enact positive change in the lives of their students. When faculty realize that what they do in their own classrooms has a ripple effect throughout the whole campus community in terms of the student experience, there is no limit to the positive repercussions that can result. However, if faculty refuse to assume part of the retention problem, there is no way an institution can achieve the retention benchmarks that will be necessary in the future to be a financially viable entity. Retention needs to become everyone's business.

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Meeting Students Where They Are: A Faculty/Peer Mentor Program

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In *Transforming Students: Fulfilling the Promise of Higher Education*, Johansson and Felten (2014) aptly describe the importance of transformational learning. While their book focuses on the transformational nature of undergraduate education, they certainly posit the notion that "the benefits accrue to more than just the individual students themselves."

> The more that attention to transformation is woven into the institution—the more students are taking enlightened action within the college community, the more faculty and staff aspire toward student transformation—the richer the college environment becomes. Students inspire their peers with their own experiences, insights, and courage. Colleagues encourage each other to bring out the best in their students. Structures and practices at the institution support openness, reflection, and change. In a setting like this, students themselves come to embody, and even enlarge, the university's mission of transformation. (p. 6)

Transformational learning for students is clearly a goal of many institutions, but what about the faculty? At what point do faculty enjoy the experience of transformational learning via their teaching? For some, it may occur regularly, but for others the act of teaching feels less inspiring as the years pass.

After engaging in a comprehensive self-study of first-year programming at the University of Northern Iowa (UNI), faculty and staff collaborated in order to improve its first-year experience and in doing so created a more transformative learning environment for both students and faculty. While most universities promote transformative learning for students, less focus is placed on opportunities for transformative learning among faculty. Simply defined, transformative learning involves a three-step process that includes 1) disruption in one's current world view, 2) reflection upon the possibility of this alternative way of life or view, and 3)

integration of this new perspective into one's world view (Johansson & Felten, 2014). Consequently, this chapter posits that UNI has created a course-embedded peer mentoring program that creates transformative change, in that the experience of teaching freshman-only courses in collaboration with a peer mentor has proven to be a transformative learning experience for faculty.

Research suggests that a well-crafted and carefully implemented peer mentor program can enhance student learning, and yet, less is known about the effects of course-embedded peer mentors on the host-instructor. At the 2014 National Symposium on Student Retention (NSSR), a group of faculty, staff, and administrators from the University of Northern Iowa presented "Creating classroom communities: Faculty and peer mentor collaboration in first-year only classes," which focused primarily on the measurable successes of a recently implemented peer mentoring program at UNI (Chatham-Carpenter, Heistad, Licari, Moser, & Woods, 2014). While the data presented provide guidance when looking to assess peer mentor programs, many conference participants asked the authors to provide additional information concerning the role of faculty, not only in the development, implementation, and expansion of the program, but also in terms of their experiences as host-instructor to the course-embedded peer mentors. After reviewing the steps taken to create, implement, assess, and sustain a course-embedded peer mentoring program, this chapter examines in detail the positive effects a peer mentor program can also have on faculty. In other words, while a peer mentor program will facilitate the growth of both students and peer mentors, it can also become a transformative faculty development experience for host instructors.

Bridging the Gap: Academic and Student Affairs Collaboration

Although more students are coming to four-year universities having already earned college credit, most students must satisfy at least one general education requirement in residence. The general education classroom remains the one place on campus through which virtually every student must pass. Therefore, as the University of Northern Iowa (approximate undergraduate enrollment of 10,000) sought ways to improve the first-year experience of FTIC (first time in college) students, the general education or Liberal Arts Core (LAC) classroom became a natural place to locate the effort. While some might consider the residence halls, where the majority of UNI freshmen live, as a natural location for student success and retention initiatives, there is research, including our own Mapworks[1] data, that would be quick to suggest that in doing so, we would be neglecting those students who choose to live off-campus and who are retained at a lower rate and report feeling less connected to their peers (Pascarella & Terenzini, 2005). The classroom-based approach of this peer mentoring initiative became a powerful way to promote academic and social integration in the place where all students, residential or otherwise, come

[1]Mapworks is an early intervention software system that allows UNI faculty and staff to identify student needs and concerns during the transition to UNI, and to connect those students with resources early in the semester. Mapworks is a Skyfactor product.

together (Tinto, 2000). Our most current data suggests that FTIC students—generally speaking, freshman—who enrolled in a first-year-only section of a general education course with an embedded peer mentor during their first semester at the University of Northern Iowa in 2012 were retained at a rate of 85.6% into their second year of college, in comparison to 79.6% of those who did not take a first-year-only section.

While the use of peer mentors in a variety of capacities across campus has always been part of the UNI experience, in fall 2011 UNI piloted nine sections of a new First-Year Cornerstone course with a peer mentor embedded into each section. This course satisfied existing general education requirements in college writing and oral communication. The peer mentors were asked to commit to working with the same students and the same professor during the entire 2011–2012 academic year. With evidence suggesting that the peer mentors were having a positive effect on the students' learning and transition to college, the initial pilot effort was deemed successful and the course-embedded peer mentor program increased in tandem with the added number of First-Year Cornerstone sections being offered. UNI currently offers approximately 30 sections of the First-Year Cornerstone course each year.

UNI's First-Year Philosophy Statement provides the foundation on which First-Year Cornerstone and the Peer Mentor Program are built:

> A positive first-year experience is the cornerstone of students' success in college, and by extension, their careers and lives. The University of Northern Iowa recognizes the importance and value of this positive first-year experience for students, and the need for the university to facilitate students' effective transition to the University by providing a variety of experiences, opportunities, and foundational skills to help them become successful students.

Our first attempt to realize this mission was through an intentional, ongoing effort equally supported by both Student and Academic Affairs, a first for UNI. In this context, faculty and student affairs professionals came together to develop First-Year Cornerstone, likely the first time in UNI history that both student affairs professionals and faculty were working together on equal terms, each bringing to the table the important professional insight needed to create a transformative learning experience. Though the act of coming together was focused on designing an intentional student experience, in retrospect, it is clear that an equal amount of transformative learning was experienced by the faculty and staff themselves.

Although peer mentoring is frequently a staple of most divisions of Student Affairs, the practice is less commonly used by faculty. While some faculty questioned if the use of peer mentors would somehow hamper their academic freedom, the faculty were by and large enthusiastic about the potential benefits of using course-embedded peer mentors. The research focused on peer mentoring programs clearly articulates its benefits (Chatham-Carpenter, Heistad, Licari, Moser, & Woods, 2014; Henry, Bruland, & Sano-Franchini, 2011; Rodger & Tremblay, 2003; Fantuzzo, Riggio, Connelly, & Dimeff, 1989), and whether or not faculty are aware of such research, they seemed to accept the idea as a common sense intervention. In this context,

the conversation immediately shifted to defining the peer mentor's role in the classroom. Smith (2013) identifies the key features of curricular peer-mentoring as follows, all of which were adopted in the UNI program:

> the undergraduate peer mentor's placement or attachment to a *credit course* and its instructor(s), his or her identity as a *near-peer* to students enrolled in that course, the wide variety of *peer mentoring* roles that may be instructional yet differ from authoritative instruction and grading, and the existence of a *program* that coordinates and supports the learning of peer mentors and their host instructors. (p. 27)

In this vein, UNI's Peer Mentoring Program Mission Statement includes the following goals: (1) Build a foundation for first-year student success through access to peer mentoring in the classroom, engagement in a personalized academic community, and connection to academic and personal resources; (2) Create a leadership experience for upper-level university students characterized by close collaboration with faculty, classroom teaching opportunities, and mentoring of first-year students; and (3) Produce a signature UNI first-year program within the Liberal Arts Core that touches all first-year students, resulting in more vital classroom communities and increased retention rates. Therefore, as a result of the peer mentor program, first-year students will:

- Feel that they have ready access to a helpful peer role model.
- Develop a connection to the UNI community and establish a sense of belonging.
- Identify appropriate campus resources and opportunities that contribute to their educational experience.

And peer mentors will:

- Develop a collaborative professional relationship with a faculty member.
- Establish positive mentoring relationships with first-year students in their assigned course section.
- Develop a connection with a community of peer educators that allows for open exchange of ideas related to their peer mentor classroom experience.
- Demonstrate the ability to provide feedback on student papers and projects.
- Strengthen his/her presentation and group facilitation skills.
- Identify personal strengths and leadership styles.
- Increase knowledge of key university academic and personal resources.

It has been especially important for faculty to discuss and understand the ways in which a peer mentor is different from a teaching assistant. Can a peer mentor take attendance? Absolutely, but the goal of having one's peer mentor take attendance is not solely to take the burden off of the faculty member; this task—along with collecting assignments, handing out papers, and the like—allows the peer mentor to get to know the students, their names as well as their abilities and work habits. Such tasks contribute to the creation of classroom community and must be understood as

such. Similarly, there are times when it is appropriate to ask peer mentors to critique student work, read here as providing additional feedback to students and not as a substitute for the host instructor's feedback. In other words, this type of double-team approach will ideally provide students with as much as twice the feedback they would normally receive. The faculty began to understand that the addition of peer mentors to the First-Year Cornerstone course meant that they could increase the scope of learning.

First-Year Cornerstone is a two-semester, integrated communication class emphasizing written, oral, visual, and electronic communication as central processes of life-long inquiry. Over the course of the year, students develop other abilities that are vital for their transition to and success at UNI. Such skills include critical and creative thinking, decision-making, ethics, and working with diverse perspectives. Students explore their own identities, discover their intellectual interests, learn to do research, and engage in academic inquiry to ultimately achieve academic and personal success. As part of the UNI first-year experience, First-Year Cornerstone is committed to fostering a personal and supportive environment that challenges and inspires students to actively engage in learning and reflection, develop a broader world view, be engaged citizens, and be members of pluralistic communities. Cornerstone instructors are committed to creating a welcoming and safe environment both in and outside the classroom that is sensitive to the individual needs, backgrounds, and experiences of all first-year students (see Appendix A, "Template: Sample First-Year Cornerstone").

Often when describing the relationship among the various goals of First-Year Cornerstone, faculty explain the course as a rigorous academic classroom experience around which all of the necessary resources for success are wrapped, the idea being that instead of sending the student from the classroom to the resources, the resources are systematically embedded into the classroom experience. In this way, the course clearly involves much more than academic content and skills, creating an important working space where peer mentors who collaborate with host instructors bridge the gap between academic and student affairs, and by extension, provide a supportive and transformative learning experience within and beyond the classroom.

Moving beyond the First-Year Cornerstone Course

By all relevant indicators, both the First-Year Cornerstone course and the Peer Mentor Program are making a positive impact on student learning (Chatham-Carpenter, Heistad, Licari, Moser, & Woods, 2014; White, 2014; Chatham-Carpenter & Heistad, 2014), and yet, a substantial number of students successfully complete college writing and/or oral communication prior to enrolling at UNI, meaning that more than 30% of UNI's FTIC students satisfy this requirement prior to setting foot on campus. UNI had to look for other ways in which to reach out to these FTIC students. For this reason, we expanded the use of peer mentors into other categories of the Liberal Arts Core, creating first-year-only (FYO) sections of courses ranging from Religions of the World and Math in Decision Making to Humanities and Introduction to Astronomy.

UNI's Office of Academic Advising leads the effort in determining which courses to add to the first-year experience initiative by evaluating the general education needs of each previous year's incoming class. As early as possible in the spring semester the Office of Academic Advising works directly with department heads to determine how many First-Year Cornerstone and FYO sections should be offered and who should teach them during the upcoming fall. Thus, by combining institutional data and identifying instructors who believe that a successful first-year classroom experience needs to encompass more than a standard academic content curriculum, UNI is able to position its FYO sections to have the greatest amount of impact on student learning.

Creating a Skills-Based Collaboration

Peer Mentor Recruitment and Training

As with all aspects of FYO programming, peer mentor recruitment has been a collaborative effort between the Divisions of Academic Affairs and Student Affairs. Early each spring semester, the Dean of Students Office posts a peer mentor position description and online application form on its website. Host faculty members and peer mentors encourage students in their current FYO classes to complete applications for the next academic year, creating strong leadership opportunities for rising sophomores characterized by high-quality and sustained student-faculty interactions. The Director of Student Success and Retention and current peer mentors collect and read applications, and then coordinate group and individual interviews for aspiring peer mentors. Current Cornerstone and FYO faculty members participate in this process by assisting with group interviews and consulting on final peer mentor selections.

Peer mentors are selected in late March, after which they take part in a half-day training session in early May. This training program includes a joint session during which peer mentors meet individually with their assigned host faculty to discuss expectations and begin planning for the fall semester. This conversation is guided through the use of a faculty/peer mentor expectations document, which allows each team to review ideas for how to create classroom community and facilitate student transition within the context of Liberal Arts Core classrooms. This highly collaborative training session models the types of relationships that we hope to create for our first-year students in the coming academic year.

Peer mentors enroll in a three-credit-hour seminar course entitled Studies in First Year Mentoring during the same semester that they are embedded in their assigned FYO course. This seminar allows students to discuss readings related to the role of peer educators on college campuses, to share ideas for how to support students during the transition to college, and to learn about campus resources and referral techniques. The Director of Undergraduate Studies co-teaches the course with the Director of Student Success and Retention, modeling ongoing collaboration between Academic and Student Affairs (see Appendix B, "Sample Syllabus, Studies in First Year Mentoring").

Peer mentors must complete two primary types of assignments over the course of the semester: mentoring plans and student success presentations. The instructors have built the topical order of the syllabus based on the timing of common transition issues for first-year students, informed by aggregate Mapworks data and meetings with key student services staff. Pairs of peer mentors select a student success topic from the list detailed on the syllabus, and then deliver a 10–15 minute presentation at their designated point in the semester. After receiving feedback from their instructors and classmates, peer mentors upload the final product into a common folder. This folder becomes a repository for all peer mentors to use throughout the academic year, drawing on a variety of well-researched presentations developed by their peers (with appropriate citation) any time their host instructor allows them time to share a student success presentation during class.

Seminar also creates an opportunity for students to brainstorm, build, and reflect on mentoring plans every three weeks. Peer mentors build an outline for how they will collaborate with their host instructors and build community for their students, along with how each activity connects with one of our program learning outcomes. Host instructors and peer mentors evaluate these plans in class, after which students make adjustments. Following each three-week period, peer mentors are required to turn in their recently implemented plan along with a reflection essay detailing what types of adjustments were required and what they learned from the process.

After four years of intense growth, the peer mentor program is now close to capacity. While we have seats available for every single FTIC student to take at least one First-Year Cornerstone or FYO course, our data indicates that in fall 2014 we only managed to enroll about 80% of the incoming class into one of the designated courses. We believe that this has to do with the challenge of matching schedules, course availability, preference, and needs for all incoming students. At this point, we will continue to study incoming enrollment trends in an attempt to match student needs to course availability in such a way as to serve the greatest number of students possible. In fall 2015 we will have approximately 65 course-embedded peer mentors throughout the Liberal Arts Core.

Faculty Development and Engagement

As is the case for peer mentors, Cornerstone and FYO instructors are also recruited each spring. All host instructors are then invited to attend at least three faculty development workshops each year, two in the spring prior to offering the FYO course and another during the fall semester, with additional opportunities for both the host faculty and peer mentors to participate in other student engagement activities throughout the term.

The first workshop takes place in spring just following the recruitment of new and returning FYO instructors. This faculty development session uses existing assessment data to create a portrait of UNI’s first-year student. The peer mentor leadership team uses a combination of assessment data taken from student, peer mentor, and faculty surveys; Mapworks; NSSE; and Institutional Research to describe as clearly as possible the academic, financial, and social

portrait of UNI's FTIC students. These presentations and follow-up discussions have been so well received by the host instructors that the peer mentor leadership team is looking to provide faculty development regarding first-year students to all departments.

The second faculty development workshop is combined with a spring semester peer mentor training in preparation for the following fall. In years past, this training took place just prior to the beginning of fall classes, but the decision to move it up to the preceding spring seems to have alleviated much anxiety on the part of both peer mentors and host instructors. While some nuts and bolts information is given to peer mentors, the high point of the session is the community building that takes place among the entire group and between the host instructor and his/her peer mentors. To demonstrate the ways in which the peer mentors have been trained in creating classroom community, the joint session begins with an "ice-breaker" aimed at reminding the host instructor of the importance of classroom community, something that the peer mentor is trained to foster and support. Using a prepared list of possible peer mentor duties, the host instructor and peer mentor work together to plan the semester.

The final faculty development session is a discussion-based session in which the FYO instructors are encouraged to share their experiences with each other and to provide feedback to the leadership team. During this meeting the faculty are encouraged to share specific assignments designed to increase students' engagement beyond the classroom. In this way, in spite of the vastly different content areas, host instructors can share experiences in such a way as to directly benefit the other instructors.

The faculty invited to teach these FYO courses are not required to change their course content, but are instead encouraged to allow their peer mentor to have the time and space necessary to build classroom community and to provide student support. Once a faculty member agrees to teach a FYO course and is authorized to do so by the department head, a letter is sent thanking the faculty member for his/her ongoing commitment to excellence in Liberal Arts Core teaching while at the same time providing the faculty member with the history of the program as well as the roles and responsibilities of host instructors (see Appendix C, "Peer Mentor Contract, May Workshop").

We ask that FYO faculty commit to creating a welcoming and safe environment both inside and outside the classroom that is sensitive to the individual needs and experiences of all first-year students. By providing this type of support while helping students connect with faculty, other students, staff, and support services, each FYO course can foster an academic environment that challenges and inspires students to actively engage in learning, to develop a broader world view, to practice responsible decision-making, and to open their minds to new possibilities. In this context, the faculty begin to understand that while the FYO and Peer Mentor Program experiences involve a complex collaboration among peer mentors, first-year students, Liberal Arts Core instructors, and the peer mentor program/seminar leadership team, in the end, the peer mentors can only achieve their goals with the guidance and mentoring of the host instructors (another embedded mentoring relationship, if you will). Although practices may vary a bit by course, faculty members are expected to collaborate with peer mentors by meeting regularly with

the peer mentor for planning/check-in purposes (30 minutes per week is typical) and by providing feedback as requested on peer mentor performance to program coordinators and clear expectations on how the peer mentor will contribute to the class. Student experiences vary by class size and faculty teaching style, but our aim is that peer mentors will help build community within the classroom, and mentor first-year students. Possible duties include:

- Using Mapworks, UNI's early warning system, to determine which students in the course are struggling during the transition to college, and following up with them through personal connections.
- Helping to facilitate classroom activities, allowing for smaller group opportunities.
- Meeting individually with students to prepare for an upcoming assignment/project (not as possible in larger class sessions).
- Presenting short (10–15 minute) lesson plans on student success topics such as using campus resources, registering for classes, health and wellness, and so forth.
- Taking attendance and grading.

We recognize that in order to accommodate these additional learning goals, faculty may need to rework portions of their LAC course. In particular, we ask that all FYO faculty:

- Include in the syllabus information regarding UNI's first-year philosophy as well as a description of the peer mentor's role in the course.
- Allow the peer mentors to do at least five short (10–15 minute) presentations during the semester. (Faculty will have the final decision regarding the topics of those presentations. Some of the most popular presentations have been "Time Management," "Study Strategies for Final Exams," "Getting Involved on Campus," "Overcoming Homesickness," and "Avoiding Plagiarism.")
- Finally, we ask that FYO faculty attend two meetings prior to the beginning of fall 2015 classes, the first to discuss UNI's first-year initiatives, the peer mentoring program, and data pertaining to UNI's first-year students and the second to participate in a collaboration seminar with their peer mentor(s) (see Appendix D, "Sample Letter to FYO Faculty").

Although faculty have always received the aforementioned information, the Peer Mentor Program leadership team has over time become more systematic in communicating with faculty and more deliberate in providing FY student data and related recommendations to host instructors.

Supporting Faculty/Peer Interaction through Effective Use of Information

Adding Value for Faculty through Data

To educate host instructors on FY programming as part of the host instructor development initiative, the peer mentor leadership team shares FY research regarding best practices and

contextualizes it within UNI's own institutional data. Much of this data relies on UNI's Mapworks initiative (EBI MAP-Works, 2014), which provides a platform for the analysis of student background characteristics in combination with responses to surveys conducted during significant transition periods for new freshmen on campus. Given the nearly 95% response rate to the Mapworks fall survey, faculty and staff across campus find value in using the data to discern the most common student issues and concerns that first-year students are facing.

At the first faculty development session for host instructors, the co-chairs of the Mapworks program, who are also members of the peer mentor leadership team, share the data related to academic and the socio-emotional transition and adjustment of UNI freshmen. For example, one of the data points that most intrigued the 2014 cohort of FYO host instructors related to the topic of self-efficacy. When UNI's Mapworks data were compared with those from our peers, students consistently scored lower on academic self-efficacy than first-year students at other institutions. The host instructors discussed this data point at length, at first wondering to what extent the results were indicative of a Midwestern cultural norm, but then moving on to discuss the ways in which the FYO setting could work to improve the students' perceptions of their own abilities. While the host instructor conversation moved in the direction of assessing FYO vs. non-FYO students in very specific goal areas, the conversation concerning our students' self-efficacy has now moved beyond the host instructors. In other words, without the course-embedded peer mentor program this conversation may never have taken place. Today there are discussions within college and departmental leadership teams aimed at better understanding the impact of this finding and how to address it within their units.

Lessons learned from the assessment data collected on the course-embedded peer mentor program over the past four years provides the Peer Mentor leadership team with the knowledge needed to make more insightful recommendations to faculty regarding first-year best practices related to student transition and academic performance. Those connections have allowed host instructors and other faculty across campus to better understand how vital the first-year transition period really is. This has created a sort of "call to action" within the Liberal Arts Core program and across departments, with faculty eager to learn about the unique issues students in their own departments are facing as they transition into life as college freshmen.

One UNI professor reflected on the impact of this data and knowledge on her teaching. Dr. Susan Hill, a member of the first cohort of First-Year Cornerstone instructors, explains how learning about common issues facing freshman students has changed her not only her perceptions, but also her teaching. In "Cornerstone: An Experiment in Interdisciplinarity and Community" (Chatham-Carpenter & Heistad, 2014), Hill writes:

> I had no idea that first-year students are so scared of professors, but they are. I had no idea that so many students come to college with such minimal study skills or strategies to manage their time. I had no idea that it would be helpful to students to offer suggestions for how to read a textbook effectively, or to study for a test, or point out that the skills they are learning are likely applicable to every course they take. I had no idea that being attentive to such

> matters could create a classroom context where I could have higher expectations of my students. Paying attention to these issues has made my teaching more meaningful and more enjoyable. It's expanded my idea of what it means to be a college professor, and what I can do to create an open, welcoming, collaborative, challenging—read: educational—classroom (p. 6).

In addition to the distribution of the Mapworks data, host instructors must also be well versed in other student data points that are critical to student success (Kuh, Kinzie, Schuh, Whitt, & Associates, 2010). Thus, the FYO faculty development sessions also focus on various statistics, including information related to socio-economic status of new students, academic preparation (ACT, high school GPA), race/ethnicity, and first generation status. This again helps reinforce the importance of the understanding of these characteristics in FYO programming on campus. For many, prior to joining the FYO teaching cohort they had never had the opportunity to discuss how these factors could impact student learning and success in their courses. Dr. Douglas Shaw, a UNI faculty member who has taught both First-Year Cornerstone and other FYO classes, describes his growth as a FYO teacher in the following terms:

> When I started as a mathematics professor at the University of Northern Iowa, I was the "teaching radical" in my department. I was using the newest techniques, and I knew The Way. After a dozen years had passed, I had become a fuddy-duddy, set in his ways, and hadn't really realized it. My "newest techniques" weren't that new, nor had I really examined them in years, while some other professors in the department were experimenting with the real cutting edge in mathematics instruction.
>
> Cornerstone put me in an environment where, for the first time since my first year of graduate school, I was the new person. I still had my magnificent skills, but some of them didn't apply to this new type of non-math course, and the rest of them required me to really think about how they applied to teaching oral and written communications along with first-year content. During our extensive training, I was involved in very deep, high-level discussions of content and pedagogy with masters in the field. . . .
>
> I was most changed by a talk, early on, on the composition of UNI's first-year students. I've been interacting with them for years, and won an award for my Liberal Arts Core (LAC) teaching, but I didn't know (for example) how many of them were first-generation college students, and what their attitudes were. I hadn't taken that into account before, and now I could. . . .
>
> When I teach mathematics now, I no longer take for granted that students know how to study and realize how things are done in college. I'm now aware that when a student comes into my office to argue about a grade, while that student knows that such an action is possible, many of my students who DO have legitimate questions or issues just aren't aware they can come

> in my office and argue the point.
>
> I now make sure that my students understand how the game is played—what office hours mean, and how serious I am that they can make appointments to see me otherwise. I am much clearer in my expectations for homework assignments, quizzes, and tests. . . .
>
> I am proud of my work with Cornerstone, honored that I was invited to be a part of it, and recommend the experience of teaching it to all of my colleagues, as it becomes an established and important part of the first-year student experience at the University of Northern Iowa. (Chatham-Carpenter & Heistad, 2014, pp. 22–23)

Dr. Shaw's self-reflection serves as a reminder that both instructors and FTIC students change over time. Dr. Shaw's reflection speaks to his own transformative learning experience, in which disruption and reflection have led to a renewed sense of pride and purpose. First-year students can be best understood, not just as a generation of young people, but instead using the institutional-specific data available at any institution. Simultaneously, his reflection indicates that even the most seasoned teacher can experience transformation when community building among faculty takes place.

Assessing the Course-embedded Peer Mentor Program

To assess the peer mentor program's effectiveness, data is collected from FTIC students, peer mentors, and host instructors. To begin, students enrolled in FYO courses are asked to respond to a number of surveys, parts of which aim to gauge the perceived influence of the involvement of peer mentors in the courses on student learning and success. When asking students about their experiences with their peer mentors, it was clear that the peer mentors helped the students build a sense of community within their classroom. Students often related better to their peer mentors than to the faculty teaching the course, given that the peer mentor was only a year or two removed from their own first-year transition and experience. Some of the students' comments' included:

- I have found my peer mentor to be very helpful with overall college success because of my peer mentor's own experience in college.
- [My peer mentor] not only takes an interest in our in class experience but also our lives as well. She is extremely helpful and always encourages us to contact her. She has made Cornerstone a fun place to learn and a great way to start my college career.

Comments from the end of the year assessments also highlight the impact of the peer mentor on the academic success of students in the course.

- When the professor is unavailable, the peer mentor is there to help with questions and help to better understand the assignment and what needs to be done.
- I have found [the peer mentors] both to be helpful in the way they will peer review

papers, set up sessions to help go over speeches, and inform us of college overall.

Relatedly, peer mentors are surveyed to gain a better understanding of the activities they designed for their course. Given that there was flexibility within each course on how a host instructor engaged the peer mentor in the classroom, it was essential to understand how the peer mentors are being utilized and to inventory the most common activities in which the peer mentors are involved. Similarly, the survey gauged peer mentor satisfaction in the working with the host instructor and general experience in the program.

The peer mentors indicated a good amount of satisfaction with both their classroom participation and with their communication with their instructors, with scores ranging between 4.07–4.60, on a 5-point scale (very dissatisfied–very satisfied) on items such as (a) opportunities for helping in the classroom (M = 4.07), (b) opportunities to present information in class (M = 4.21), (c) opportunities to help respond to student work (M = 4.40), (d) faculty communication about weekly class planning (M = 4.53), (e) faculty feedback on how well you're doing (M = 4.47), and (f) faculty's general communication with you (M = 4.60) (Chatham-Carpenter, Heistad, Licari, Moser, & Woods, 2014). Qualitative data collected from the peer mentors reflects the quantitative findings. Peer mentors are not only gaining valuable leadership experience from their involvement in FYO courses, they are also being mentored themselves by the host faculty. Consequently, as the data show, they are extremely satisfied with their experiences as peer mentors:

- I feel that my instructor was awesome, and I did not have any issues!! She was truly a great inspiration to me as well as the students I'm sure, and I look up to her not only in the setting at UNI but also outside of class. I really consider her a role model and I am so grateful to have had the opportunity to work with her this year!
- There's nothing I would change in my experience at a peer mentor, I loved getting to know so many students, help them adjust to the college experience, lead class activities and work with such a great and knowledgeable professor!

While this sample snapshot of the FYO assessment plan does not speak to our ongoing efforts at direct assessment of student learning, it does speak to the success of the course-embedded peer mentor program. Furthermore, this type of data is essential when it comes to ongoing faculty development for host instructors.

Conclusion

In a relatively short amount of time, the course embedded peer mentor program has become a significant part of our campus culture. By starting small, with a cohort of only nine faculty, the peer mentor leadership team was able to work closely with faculty, staff, and administrators to ensure a level of ownership that would allow for both growth and sustainability. We have learned to continually build our case for this program through assessment, planning for direct and indirect assessment each year. Opportunities abound for this type of assessment through existing

data sources, including Mapworks survey data, retention and GPA tracking, and mentoring reflections written by peer mentors during the seminar course. Biannual surveys of peer mentors and host instructors measure program impacts on each group, as do institution-specific questions built into annual Mapworks surveys of first-year students. By gaining a course section or two each semester from various departments, this program has grown to six times its original size over the past four years and become a distinctive component of our Liberal Arts Core and first-year experience.

To be sure, a sense of trust has been established between the host instructors and the peer mentor leadership team. Faculty who may have once questioned the need for inserting student affairs-type learning, in terms of community building and student engagement, into the academic classroom have in fact been *transformed*. The experience has allowed these host instructors to engage in a process of transformative learning leading to improved pedagogies and community in their classrooms. Clearly, a course-embedded peer mentoring program can be transformative to all involved.

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Appendix A.
Template: Sample First-Year Cornerstone Syllabus
FIRST-YEAR CORNERSTONE
DATES

Example: University of Northern Iowa (UNI)
Fall 2012–Spring 2013 (6 hours)—fulfills categories 1A & 1B of UNI's Liberal Arts Core
Students who fail to complete BOTH semesters of this course will NOT satisfy either Category 1A or 1B of the UNI Liberal Arts Core.

Primary Instructor:
Class librarian:
Peer Mentor:

First-Year Philosophy Statement

Example: UNI Philosophy Statement

A positive first-year experience is the cornerstone of students' success in college, and by extension, their careers and lives. The University of Northern Iowa recognizes the importance and value of this positive first-year experience for students, and the need for the university to facilitate students' effective transition to the University by providing a variety of experiences, opportunities, and foundational skills to help them become successful students.

In the first year, students learn to take responsibility for their own learning and develop a sense of who they are as members of a diverse community, both on campus and outside of the university. Students become active participants in campus and community life, engage in a variety of experiences, learn to listen to and respect diverse perspectives, and develop foundational skills to help them become well-educated persons. Students engage in critical inquiry throughout their first year and begin to communicate the results of this inquiry in order to work for the common good within our pluralistic society.

Course Description

Example: UNI Course Description

This two-semester course is an integrated communication class emphasizing written, oral, visual, and electronic communication as central processes of lifelong inquiry. Students will develop other abilities that are vital for their transition to and success at UNI. Such skills include critical and creative thinking, decision-making, ethics, and working with diverse perspectives. Students will explore their own identities, discover their intellectual interests, learn to do research, and engage in academic inquiry to ultimately achieve academic and personal success. As part of the UNI first-year experience, First-Year Cornerstone is committed to fostering a personal and supportive

environment that challenges and inspires students to actively engage in learning and reflection, develop a broader world view, be engaged citizens, and be members of pluralistic communities. Cornerstone instructors are committed to creating a welcoming and safe environment both in and outside the classroom that is sensitive to individual needs, backgrounds and experiences of all first-year students.

Goals and Outcomes

Example: UNI's Course Goals.

Communication covers the skills individuals (selves) need to send and receive messages, but also the language, grammar, concepts, and associations to words and images that allow us to interact with each other socially. You are going to work on this goal by:

Composing and presenting effective written and oral messages in a variety of contexts.

Documenting your awareness and skillful use of effective writing and speaking processes.

Your success in college, at its most basic level, is your responsibility, but you can also develop strategies that can assist you in being successful throughout your college career. You are going to work on this goal by focusing on:

Demonstrating strategies for succeeding in college and beyond.

Working constructively in groups to solve problems and accomplish tasks.

Civility is embodied in your ability to interact well with others. Civility requires knowing that one's own behaviors always take place in relation to the norms, expectations and interpretations of others. You are going to work on this by focusing on:

Recognizing that there are multiple perspectives and world views, and identifying how these differences affect interactions with others.

Examining the impact of your beliefs and values on your interactions with others.

Required Materials

***Examples from UNI*:**

Griffin, C. L., & Bone, J. E. (2014). *Invitation to human communication*. Boston, MA: Wadsworth.

Wysocki, A. F., & Lynch, D. A. (2013). *Compose, design, advocate: A rhetoric for integrating written, oral, and visual communication* (2nd ed.). Boston, MA: Pearson.

Wysocki, A. F., & Lynch, D. A. (2012). *The little DK handbook*. Boston, MA: Pearson

McMillan, T. (2012). *The American way of eating*. New York: Scribner.

Assignments

Example: Assignments developed and assigned weights for a section of UNI's First-Year Cornerstone course

Student Engagement and Homework (25%)

Campus Engagement Activities

Studies show students who are engaged on campus have higher GPAs and graduation rates. Thus, you are required to attend ten activities, and give a "pop speech" or write a brief summary/reflection on your experiences.

Meetings with Course Instructor, Peer Mentor, & Librarian

In this course, because we want to be part of a community of learners with you, you will be required to meet multiple times with your course instructor, Peer Mentor, and librarian. You will earn credit for each required meeting.

Surveys

In this course, you will be required to complete several short surveys outside of class time (i.e., pre-course survey, Mapworks, Proficiency Profile, and Alcohol/Marijuana eCheckup. If you would like an alternate assignment instead of surveys, let me know.

Free Writes & Misc. Homework

When homework is assigned, it must be turned in during class on the day it is due. Periodically, in class, you will be provided with a prompt and will write a response for a few minutes. I call these opportunities "free writes" or "low-stakes writing." These are opportunities for me to understand where you're coming from and for you to communicate with me. I may also ask you to turn in homework assignments at times in class, in order to help us in our discussion and understanding of class topics.

Major Project 1: Family and Food Narrative Project (20%) You will create a narrative about some experience you or your family has had surrounding food. This assignment (a speech on some aspect of the experience, followed by an essay) will ask you to examine how your past helps to shape your perception of both the present and the future on the topic of food. The essay can be submitted as an entry to the competitively selected "Common Read Breakfast with the Author" contest, if you desire. You will be encouraged to use sensory descriptions, concrete details, active verbs, and an appropriate voice in both your speech and essay. You will be asked to not write your speech out and just have that same written version be your paper—you will practice making strategic choices, based on your rhetorical situation (i.e., purpose, audience, and context), that will mean these two genre forms will look different from each other. Some examples of ways you might approach this assignment are listed below:

Major Project 2: Rhetorical Analysis (20%)

In this major project, you will focus on aspects of the rhetorical triangle in your analysis of Tracie McMillan's *The American Way of Eating.*

Informative Project (25%)

You will research a topic related to food and/or health-related issues. After creating an annotated bibliography you will deliver a well-organized and supported informative speech on that topic.

Portfolio (10%)
This collection of work should showcase your growth over the course of the semester in speaking, writing, student engagement, and civility. You will compile your work in an electronic portfolio, with accompanying reflections for each area. We will start building the placeholders for your work at the beginning of the semester, but it will be your responsibility to put items into the portfolio throughout the semester, as you complete them. You will be responsible for providing reflections for each artifact you place in the portfolio, as well as overall reflections on your growth this semester in the areas of speaking, writing, student engagement, and civility. You will present a lesson you learned from your first semester during the final exam period in a formal presentation.

Example: Abbreviated UNI Assignment Chart

Assignment	**Points**	**Total Points**	**% of final grade**	**I earned**
Student Engagement and Homework:		***250***	***25%***	
Instructor Conferences (X 2 – 10 pts. per conference)	20			
PEER MENTOR Conferences (X 2 – 10 pts. per conference)	20			
Librarian Conference (X1 – 10 pts. per conference)	10			
10 Campus Engagement Activities & reflections/pop	50			
Literature Circles	40			
Four Required Surveys (or alternate activity negotiated with instructor)	40			
Misc. Homework & Activities	50			
Food movie exercise	20			
Major Project 1: **Narrative Project**		***200***	***20%***	
Part I: Speech		**100**	**10%**	
Draft Outline	10			
Final Outline & Speech	70			
Reflection	10			
Peer Speech Evaluation	10			
Part II: Essay		**100**	**10%**	
Design Plan	5			
Draft Essay & Peer Review	15			
Final Essay	70			
Reflection	10			
Major Project 2: **Rhetorical Analysis Project**		***200***	***20%***	

Design Plan	15			
Draft Essay & Peer Review	25			
Final Essay	75			
Presentation with Outline	75			
Reflection	10			
Major Project 3: **Informative Research Project**		***250***	***25%***	
Part I: Annotated Bibliography		**100**	**10%**	
Peer APA Review of Citation Style & Bibliography Entries	20			
Annotated Bibliography	80			
Part II: Informative Speech		**150**	**15%**	
Draft Outline	10			
Speech & Final Outline & Bibliography	120			
Peer Evaluation of Speech	10			
Reflection	10			
Major Project 4: **Portfolio**		**100**	***10%***	
Collection of Artifacts and Table of Contents	30			
Reflective Essay for Course Goals	60			
Portfolio Presentation	10			
Total		**1000**		

Grading Scale *[Insert here]*

Course Expectations *[Insert Course Expectations, to include attendance, due dates, classroom behavior, communication with instructors, and grade requirements.]*

Attendance and Assignment Due Dates

Example: UNI Introductory Statement on Attendance

Together, we are a community of readers, writers, and speakers. Your presence or absence affects everyone in the community. Your comments and questions, and your ability to listen well to others and respond thoughtfully, affects everyone in the class. Consider this class your opportunity to develop good habits of attendance and participation in your new role as a responsible adult. Attendance is expected and will be taken. While I do believe that I have something important to teach you, it is most important to me that you are here to dialogue with your fellow students. You most effectively learn to communicate through the act of communicating.

Respect and Courtesy *[Insert information on speech etiquette, cell phone usage, and netiquette.]*

Instructor Communication *[Insert statement concerning communication with the instructor.]*

Grades and Grade Disputes

Example: UNI Expectations for Grades Earned

Each assignment completed in this class requires preparation, thoughtfulness, and creativity. You are expected to demonstrate your understanding of reading assignments and class discussion on all assignments. Students do not earn an A because they met the minimum requirements, tried their hardest, or spent a lot of time on the assignment. Grades are earned, not given, and I will follow the following descriptions as I grade your work:

A – Achievement that is **outstanding** relative to the level necessary to meet course requirements.

B – Achievement that is **significantly above** the level necessary to meet course requirements.

C – Achievement that **meets** course requirements in every respect.

D – Achievement that is **worthy of credit even though it fails to meet fully** the course requirements.

F – Represents failure and signifies that the **work was not fully completed, nor at a level of achievement that is worthy of credit**.

You are **always** welcome to challenge the grades you receive in the course. These grade challenges must be typed and are due the following class period after the grade was received

University Policy

The Americans with Disabilities Act *[Insert information on the ADA and contact points for students needing assistance.]*

Academic Misconduct *[Insert college or university policies on academic misconduct, including information on relevant topics such as plagiarism, ethics policies, and consequences of failure to compliance comply with policies.]*

Anti-discrimination and Harassment Policy *[Insert college or university policy on anti-discrimination and harassment, and contact information for students needing assistance.]*

University Resources *[Insert relevant sources and websites here, to include Academic Advising, Financial Aid, Health & Wellness, and centers, tutor services, or other resources that provide assistance with writing, math, science, reading, and learning strategies. Also identify where students can get copies of the Student Handbook.]*

Appendix B.
Sample Syllabus
Studies in First-Year Mentoring
[Insert course meeting time here]

Instructors:

First-Year Philosophy Statement

Example: UNI First-Year Philosophy Statement

A positive first-year experience is the cornerstone of students' success in college, and by extension, their careers and lives. The University of Northern Iowa recognizes the importance and value of this positive first-year experience for students, and the need for the university to facilitate students' effective transition to the University by providing a variety of experiences, opportunities, and foundational skills to help them become successful students.

We are committed to creating a welcoming and safe environment both inside and outside the classroom that is sensitive to individual needs, backgrounds, and experiences of all first-year students; facilitates their connections and points of contact with faculty, other students, staff, and support services; encourages their active involvement in community life; and introduces them to the community values of respect, caring, ethical responsibility, inclusiveness, and intellectual and social engagement.

We are committed to fostering a personalized and supportive academic, experiential, and living environment that challenges and inspires students to actively engage in learning, to develop a broader world view, to practice responsible decision-making, to open their minds to new possibilities, to be engaged citizens, and to be prepared to be members of pluralistic communities.

This is the context in which the Peer Mentoring Program was conceived and implemented.

Peer Mentoring Program Mission Statement

Example: UNI Peer Mentoring Program Mission Statement

The mission of the University of Northern Iowa Peer Mentoring program is to:

Build a foundation for first-year student success through access to peer mentoring in the classroom, engagement in a personalized academic community, and connection to academic and personal resources.

Create a leadership experience for upper-level university students characterized by close collaboration with faculty, classroom teaching opportunities, and mentoring of first-year students.

Produce a signature UNI first-year program within the Liberal Arts Core that touches all first-year students, resulting in more vital classroom communities and increased retention rates.

Therefore, as a result of the Peer mentor program, first-year students will:

Feel that they have ready access to a helpful peer role model.

Develop a connection to the UNI community and establish a sense of belonging.

Identify appropriate campus resources and opportunities that contribute to their educational experience.

Learning Outcomes

Example: UNI Learning Outcomes for Peer Mentoring Program

Develop a collaborative professional relationship with a faculty member.

Establish positive mentoring relationships with first-year students in their assigned course section.

Develop a connection with a community of peer educators that allows for open exchange of ideas related to their peer mentor classroom experience.

Demonstrate the ability to provide feedback on student papers and projects.

Strengthen his/her presentation and group facilitation skills.

Identify personal strengths and leadership styles.

Increase knowledge of key university academic and personal resources.

Peer Mentor Expectations

Example: UNI Peer Mentor Expectations

10 hours per week of work in support of the assigned first-year course, including:

1. Office hours (2)
2. Participation in UNIV 3186: Studies in First-Year Peer Mentoring seminar (3)
3. Attending every class session of assigned first-year course, modeling active learning and assisting as directed by faculty member (3)
4. Classroom leadership and mentoring experiences including (but not limited to) individual meetings with first-year students, student outreach, interacting with and making referrals through Mapworks system, grading, facilitating classroom activities as directed by faculty partner, check-in/planning meetings with faculty partner, attending co-curricular activities with students, lesson planning for class presentations (2)

Attend Peer Mentor staff meetings and training workshops

Participate in assessing the effectiveness of the program

Faculty Member Expectations

Example: UNI Faculty Member Expectations

The Peer Mentor experience involves a complex collaboration among Peer Mentors,

First-Year students, LAC instructors and the seminar leadership team. To this end, we acknowledge that the Peer Mentors can only achieve their goals with the guidance and mentoring of the faculty. As such, Peer Mentors can expect the following from the faculty members with whom they are collaborating. Though faculty member expectations may vary, faculty members are expected to collaborate with Peer Mentors as follows:

1. Meet regularly with your Peer Mentor for planning/check-in purposes (30 minutes per week is typical)
2. Provide feedback as requested on Peer Mentor performance to seminar instructors
3. Provide clear expectations on how you would like your Peer Mentor to contribute to the class

Student experiences vary greatly by class size and faculty teaching style. Our hope is that the Peer Mentor will help build community within the classroom and mentor first-year students. Possible duties include:

1. Taking attendance and grading
2. Using Mapworks to determine which students in your course are struggling during the transition to college, and following up with them through personal connections
3. Helping to facilitate classroom activities, allowing for smaller group opportunities
4. Meeting individually with students to prepare for an upcoming assignment/project (not possible in larger class sessions)
5. Presenting short (15 minute) lesson plans on student success topics such as using campus resources, registering for classes, health and wellness, etc.

Required Materials

Examples of Materials:

Cline, Ernest. *Ready player one*. (provided, Cornerstone only)

Gardner, J. (any edition). *Your college experience.* Boston: Bedford St. Martin's. (copies available in LAC office)

Newton, F. B., & Ender, S. C. (2010). *Students helping students: A guide for peer educators on college campuses* (2nd ed.). San Francisco: Jossey-Bass. (provided)

Attendance and Participation

Example: UNI Expectations.

Each of you is expected to attend two class sessions per week. This includes your assigned small group seminar day (Monday-FYO PMs or Wednesday-C-stone PMs) and the Friday large group seminar . . .

Grading

Example: UNI Grading Weights

Mentoring plans (40%)

Learning portfolio (10%)
Host instructor's feedback (25%)
Active and meaningful participation in the PTA seminar (25%)

Assignments

Example: UNI Sample Assignments

Mentoring Plan

Each Peer Mentor must create and implement four distinct mentoring plans designed specifically for his/her students. It is recommended that you share your plan with your host instructor prior to implementation. You mentoring plan will include 3 sections.

1. List of possible mentoring activities/presentations.
2. List of mentoring activities/presentations you plan on doing.
3. Description of each activity or presentation you intend to do. The description should include: 1) a paragraph describing the activity/presentation as well as a justification for why you believe that your students will benefit from this particular activity or presentation, 2) a paragraph describing the learning goal you hope to achieve.

Mentoring Plan Reflection Paper

A 1-page minimum single-spaced reflection on the implementation. Did you follow your original plan? Why or why not? How did the students react to your activities/presentations? Did you accomplish the goals you set? Were there other goals that you achieved? How did the implementation of this plan affect the planning of your next 3-week plan? Along with your reflection paper, please turn in your mentoring plan as well as any materials you used (i.e., power points, emails, surveys, etc.).

Portfolio

Each PTA is expected to maintain a learning portfolio that serves to demonstrate that you have achieved the specific learning outcomes for this program. In addition to your biweekly reports that will include your accomplishments, hours worked, challenges faced and dealt with, etc., you will include supporting artifacts demonstrating your success this semester. Artifacts may include, but are certainly not limited to, PowerPoint of presentations, emails you sent to students, example of student feedback you gave, emails you received, lesson plans you prepared, discussion questions you wrote, class activities you created, etc. You will also provide a 1–2 page single-spaced reflective essay summarizing your work, demonstrating what you believe you have gained from this experience based on what you put into it. In the final portion of your essay, we encourage you to share with us what grade you believe you earned and why. We will schedule a portfolio conference time to meet with you individually to talk about your assessment at the end of the semester.

Example: UNI Tentative Course Schedule

Week	(Monday/Wednesday)	(Friday)
1	Introduction to seminar & FYO courses Connecting with students Presentations sign-up	Lecture/discussion: What we know about FY students How to create your Peer Mentor Plans
2	Cornerstone introduction Common assignments Recording speeches Assessment	Lecture/discussion: Ethics of being a Peer Mentor Creating presentations for your students **DUE: Mentoring Plan #1** (Weeks 3–5)
3	**Presentations:** Being engaged in learning—listening, taking notes, and participating in class Time management	Overcoming Homesickness, and related topics
4	Mapworks training	Making referrals Role play activities Discussion of Mapworks Brainstorming ideas for Mentoring Plan
5	**Presentations:** Overcoming homesickness Test anxiety	Ethics of Providing Academic Assistance **DUE: Mentoring Plan #2**
6	**Presentations:** Reading to learn from college textbooks Learning to study, comprehend, and remember	Getting Involved on Campus. **DUE: Mentoring Plan #1 Reflection due**
7	**Presentations:** Thinking critically—The basis of a college education Improving performance on exams and tests **Cornerstone check-in**	Student Development Brainstorming for Mentoring Plan #3
8	Small group mid-term conferences	Academic Advising Academic Advising Center Academic Dishonesty **Due: Mentoring Plan #3**
9	**Presentations:** Avoiding plagiarism Registering for spring classes	Lecture/discussion: Why do I have to take this course? Understanding meaning and purpose of LAC. **Due: Mentoring Plan #2 Reflection**
10	**Presentations:** Why the LAC is important Appreciating diversity	Financial Literacy Brainstorming for Mentoring Plan #4

11	Cornerstone update	Student Development **Due: Mentoring Plan #4**
12	**Presentations**: Balancing Extra-Curricular and Academic Endeavors	Guest Speaker **Due: Mentoring Plan #3 Reflection**
13	**Presentations:** Managing your money Establishing & maintaining relationships **Cornerstone check-in**	No class—Thanksgiving break
15	Portfolio conferences	Lessons learned—LAC PMs only
16	Portfolio conferences	Lessons learned Preparing for next semester

Appendix C.
Faculty/Peer Mentor (PM) Planning Worksheet

Ideas for Collaboration and Involvement

As you work together to prepare for the fall semester, consider using the following checklist to help guide your conversation about expectations for involvement and ideas for collaboration in your first-year course.

Activity	Instructor's Thoughts	Peer Mentor's Thoughts	Notes/Recommendations
Taking attendance			
Icebreakers			We recommend that the peer mentors facilitate icebreakers during weeks one and two. Doing this will help the peer mentors and instructors to get to know the students and will allow the students to get to know each other. Previous peer mentors have told us that this is key to creating a classroom community early on in the semester.
Reading and grading student work: Journals/reflections Quizzes Others			PMs often ask whether or not they are expected to complete all of the readings given to the students.
Reviewing Mapworks results for outreach			We suggest that all peer mentors and host instructors have a plan for meeting with students to discuss their Mapworks survey results. The peer mentors will receive Mapworks training via the PM seminar. For larger classes it may only be possible to meet with students in groups.
Individual meetings with students			
Small group meetings with students			
Facilitating lessons			We suggest setting aside at least 10 minutes

on various topics such as time management, registering for classes, getting involved on campus, homesickness			a week for the peer mentors to do some type of student success presentation. The peer mentors will be expected to prepare and practice these types of presentations during the PM seminar.
Weekly meetings between instructor and PTA			
Coordinating out-of-class engagement opportunities			
Managing eLearning			
Creating/maintaining social networking for class			
Regular emails to students with class information			
Facilitating class activities			
Leading class discussions			
Leading study groups			
Office hours			Space is reserved for PMs outside of the LAC office in Rod Library. We have a sign-in sheet there and often post PM-related announcements. All PMs are expected to hold two office hours per week.

Adapted from Clarke, K., Kennedy, T., & Sewell, M. (2013). *Strategies for training, motivating, and supporting peer educators*. 32nd Annual Conference on the First-Year Experience: Orlando, FL.

Appendix D. Sample Letter to FYO Faculty

To: FYO faculty
From: Director of Undergraduate Studies
Date:
Re: First-Year Only (FYO) Teaching

Based on your commitment to excellence in Liberal Arts Core teaching, it is my pleasure to invite you join UNI's cohort of First-Year Only (FYO) instructors for fall 2015. I would like to share with you why we have implemented this project as well as the roles and responsibilities of faculty and the peer mentors selected to participate.

At the heart of all of our first year initiatives is the *UNI First-Year Philosophy Statement:*

> *A positive first-year experience is the cornerstone of students' success in college, and by extension, their careers and lives. The University of Northern Iowa recognizes the importance and value of this positive first-year experience for students, and the need for the university to facilitate students' effective transition to the University by providing a variety of experiences, opportunities, and foundational skills to help them become successful students.*

With this in mind, we ask that FYO faculty commit to creating a welcoming and safe environment both inside and outside the classroom that is sensitive to the individual needs and experiences of all first-year students. By providing this type of support while helping students connect with faculty, other students, staff and support services, your FYO course can foster an academic environment that challenges and inspires students to actively engage in learning, to develop a broader world view, to practice responsible decision-making, and to open their minds to new possibilities. This is the context in which the FYO and Peer Mentoring Program were conceived and implemented.

If you choose to serve as a FYO instructor, you will be assigned a peer mentor whose primary role is to support student learning and build classroom community. The mission of the University of Northern Iowa Peer Mentor Program is to:

- Build a foundation for first-year student success through access to peer mentoring in the classroom, engagement in a personalized academic community, and connection to academic and personal resources.
- Create a leadership experience for mid- and upper-level university students characterized by close collaboration with faculty, classroom teaching opportunities, and mentoring of first-year students.

- Produce a signature UNI first-year program within the Liberal Arts Core that touches all first-year students, resulting in more vital classroom communities and increased retention rates.

Furthermore, as a result of the Peer Mentor Program, first-year students will feel that they have ready access to a helpful peer role model, develop a connection to the UNI community and establish a sense of belonging, and identify appropriate campus resources and opportunities that contribute to their educational experience.

To achieve the aforementioned goals, your peer mentor(s) will enroll in the seminar "Studies in First Year Peer Mentoring" (3 hrs.). As part of the seminar requirements, peer mentors are expected to complete 10 hours per week of work in support of the assigned first-year course, including:

- Office hours (2 hrs.)
- Participation in UNIV 3186: Studies in First-Year Peer Mentoring seminar (2–3 hrs.)
- Attending every class session of assigned first-year course, modeling active learning and assisting as directed by faculty member (3 hrs.)
- Classroom leadership and mentoring experiences including (but not limited to) individual meetings with first-year students, student outreach, interacting with and making referrals through Mapworks system, grading, facilitating classroom activities as directed by faculty partner, check-in/planning meetings with faculty partner, attending co-curricular activities with students, lesson planning for class presentations (2 hrs.)
- Attend Peer Mentor staff meetings and training workshops
- Participate in assessing the effectiveness of the program

As you can see, the FYO and Peer Mentor Program experiences involve a complex collaboration among peer mentors, first-year students, LAC instructors, and the seminar leadership team. To this end, we acknowledge that the peer mentors can only achieve their goals with the guidance and mentoring of you, the faculty. Although faculty member expectations may vary, faculty members are expected to collaborate with peer mentors by meeting regularly with the peer mentor for planning/check-in purposes (30 minutes per week is typical), and by providing feedback as requested on peer mentor performance to program coordinators and clear expectations on how you would like your peer mentor to contribute to the class. Student experiences vary greatly by class size and faculty teaching style. Our hope is that peer mentors will help build community within the classroom, and mentor first-year students. Possible duties include:

- Taking attendance and grading
- Using Mapworks to determine which students in your course are struggling during the transition to college, and following up through personal connections

- Helping to facilitate classroom activities, allowing for smaller group opportunities
- Meeting individually with students to prepare for an upcoming assignment/project (not ask possible in larger class sessions)
- Presenting short (10–15 minute) lesson plans on student success topics such as using campus resources, registering for classes, health and wellness, etc.

We recognize that in order to accommodate these additional learning goals, you may need to rework portions of your LAC course. In particular, we ask that all FYO faculty:

- Include in your syllabus information regarding UNI's first-year philosophy as well as a description of the peer mentor's role in your course
- Allow the peer mentors to do at least five short (10–15 minute) presentations during the semester. (Faculty will have the final decision regarding the topics of these presentations. Some of the most popular presentations have been "Time Management," "Study Strategies for Final Exams," "Getting Involved on Campus," "Using APA or MLA Style," and "Avoiding Plagiarism.")
- Finally, we ask that FYO faculty attend two meetings prior to the beginning of fall 2015 classes, the first to discuss UNI's first-year initiatives, the mentoring program, and data pertaining to UNI's first-year students and the second to participate in a collaboration seminar with your peer mentor(s)

Once again, I would like to thank you for your demonstrated commitment to UNI's Liberal Arts Core and would be happy to answer any questions you may have. If you would like to pursue this teaching opportunity, please respond to this email at which point I will forward your name to the Director of Student Success and Retention Initiatives, who will provide further details concerning the peer mentor selection process.

I am looking forward to hearing from you in the near future.

Yours respectfully,

Director of Undergraduate Studies

Deirdre Bucher Heistad *has been at the University of Northern Iowa since 2000 and is currently serving as Director of Undergraduate Studies. After completing her PhD at the University of Illinois, Dr. Heistad began her career at UNI in the Department of Modern Languages, but she has since joined the Department of Educational Leadership and Postsecondary Education. Prior to becoming the Director of Undergraduate Studies, Dr. Heistad served as the Director of the Liberal Arts Core and as an Administrative Fellow in the Vice-President and Provost's Office.*

Kristin Moser *is Director of the Office of Institutional Research & Effectiveness at the University of Northern Iowa. Prior to this, she served as senior research analyst at UNI from 2002 to 2015. She has a PhD in Higher Education from Iowa State University, an MA in Psychology from Northern Arizona University, and a BA in Psychology from the University of Northern Iowa. Dr. Moser is the 2011–2012 recipient of the Paul P. Fidler award through the National Resource Center on the Study of the First Year and Students in Transition. Her work examined the development of capital for transfer students to facilitate successful transition and ultimately academic success at the four-year institution.*

Kristin Woods *started as Director of Student Success and Retention at the University of Northern Iowa in 2015 after having served as Assistant Dean of Students for New Student Programs and Orientation Coordinator. Prior to her arrival at UNI, Dr. Woods worked as Orientation Coordinator at the University of Iowa, and as Career Counselor at Indiana University–Purdue University Fort Wayne (IPFW). She holds her PhD in Educational Leadership and Policy Studies from Iowa State University, an MA in College Student Personnel from Bowling Green State University, and a BA from the University of Northern Iowa in Communication Studies.*

Partnerships in Learning: A Faculty-Academic Support Center Collaboration to Enhance STEM Student Success

Donna R. Potacco, Science Enrichment Center
William Paterson University

Danielle Desroches, Department of Biology
William Paterson University

Peter Chen, Department of Mathematics
William Paterson University

Valerie Saturen, Science Enrichment Center
William Paterson University

The low retention rates of students in Science, Technology, Engineering, and Mathematics (STEM), and STEM-related, majors is a serious concern in today's higher education community in the United States (Chen & Soldner, 2013; President's Council of Advisors on Science and Technology, 2012). This concern is not new to William Paterson University (WPU). The relatively high D/F rates of grades earned by students in high-risk STEM courses were identified in a 1993 Academic Support Services report, which indicated that "the highest failure rates are in mathematics and science, especially the freshman level science courses such as anatomy and physiology" (William Paterson University, 1993). In response to these concerns, a faculty member in the biology department implemented efforts to lower the D/F rate in biology courses by providing academic support to students in the biology laboratories where instruments and anatomical models were located. Throughout this initiative, she donated her time to direct the program and to help tutor the students. She also obtained funding to compensate tutors for a brief period of time through a grant. Concomitantly, the university's Academic Support Center offered science and mathematics tutoring in a separate mid-campus location. Unfortunately, relatively few students in these courses sought academic support at this center due to the inconvenience of traveling to its location. After a review of the two programs—the faculty initiative and the Academic Support Center—the biology faculty member and the coordinator of academic support for the sciences concluded that a more synergistic approach might prove more beneficial to students. In agreement, Cox and Orehovec (2007) proposed that isolated initiatives focused on student success would have marginal results as many components contribute to the student experience.

The implementation of this decision required that the skills of both groups (i.e., faculty and administrators) be used to create a structure that would enhance the likelihood of student success. The creation of the partnership between the faculty and the Academic Support Center required consistent interaction, communication, flexibility, and adaptability. Although this partnership began with the Biology Department, faculty throughout the College of Science and Health became partners in this endeavor as awareness of the program diffused among faculty and students. This paper describes the development of this partnership from its promotion to the pedagogy employed to innovate a new type of support center. This discussion focuses on primary areas of concern that were relevant to the success of this venture—proximity, promotion, and pedagogy (see Figure 1).

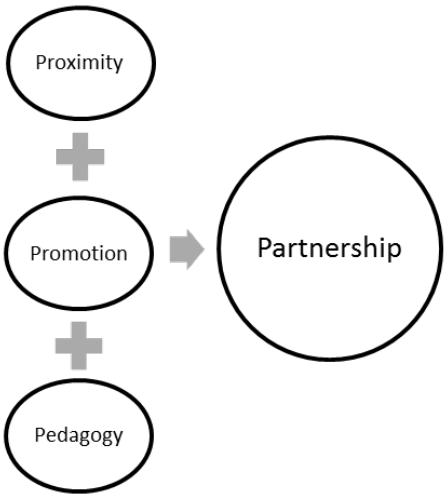

Figure 1. Primary components of a successful faculty-learning center partnership.

Creating Synergy: Partnering through Collaboration

Initially, the partnership collaborated on immediate logistic and pedagogical concerns that needed to be addressed in order to support the proposed initiative. Accordingly, efforts at this stage focused on the proximity or physical relocation of STEM-related academic support to the science building and adoption of a study group–based support model.

Proximity: The Issue of Access

The first initiative of the newly merged program was to move academic support for the sciences from its central location on the campus to the science building. This decision enabled students to have access to science resources and to meet with their faculty and fellow students between classes. The importance of situating academic support in close proximity to academic departments had also been recommended by other support programs (Casazza & Silverman, 1996; Martin & Arendale, 1992).

Pedagogy: Connecting through Study Groups

The rationale for using study groups for student support was based on a substantial body of research demonstrating the ability of study groups to promote student success (Light, 1990, 1992; Martin & Arendale, 1990, 1992, 1994; Matyas & Malcom, 1991). Results of studies show that students in study groups develop learning communities that provide them with opportunities to become connected (Ryan & Deci, 2000), to develop relationships (Bowman, 2007), and to increase their engagement with each other (Johnson, Johnson, & Stanne, 1985; Akey, 2006). These influences have been found to contribute to task persistence (Eisenberger, Kuhlman, & Cotterell, 1992). Numerous researchers have also reported that cooperative learning can also impact self-esteem, confidence, and concept reinforcement (Benware & Deci, 1984; Dansereau, 1988; Devin-Sheehan, Feldman, & Allen, 1976; Newbern, Dansereau, Patterson, & Wallace, 1994; Slavin, 1996; Webb, 1989, 1992). Observations of students participating in study groups at the center were consistent with these findings. It was also found that group learning provided facilitators with the opportunity to use a combination of theories, including behaviorism, cognitivism, schema theory, and situated learning, to promote the higher-order learning needed for STEM disciplines.

Subsequently, the partnership's attention focused on other important processes necessary for the success of a newly located center—plans for promoting and attracting students to the center. Initial promotion strategy focused on branding and the use of student incentives.

Promotion: Name Changes and Student Incentives

In order to avoid the stigma associated with remediation, the partnership decided to change the perception of the program from academic support to a learning community. Based on a faculty member's vision of a central location where a community of students could engage in collaborative exploration of the sciences, the program was renamed the *Science Enrichment Center* (SEC). The name was abbreviated to the acronym SEC to promote memorability and visibility.

In an effort to further increase student attendance, the partnership developed an incentive program to reward students for pursuing academic support in 2003. Specifically, students were provided with a coupon point for each 1.25-hour mediated study group session they attended. This point could then be exchanged for extra credit in courses taught by professors who adopted the program. Close collaboration during the development of the program ensured that faculty members were confident that the student attendance records were authentic and that stringent security measures were used to validate the coupon credit.

Initial faculty adoption of the program was relatively low. However, as assessment by the partnership showed that the reward program was successful in improving student grade outcomes and motivating voluntary study group attendance, faculty adoption of the incentive program increased. Three years after the establishment of the program, student attendance at the SEC

increased by 139%. The following year, 2007, there was a 60% increase in student attendance. A jointly published study of the coupon program's outcomes validated this effort for the larger higher education community in 2013 (Potacco, Chen, Desroches, Chisholm, & DeYoung, 2013).

In addition to the coupon program, consistent and frequent faculty presence at the center motivated student attendance by nonverbally communicating their endorsement of the center and promoting a sense of community.

Realizing a Sense of Community through the SEC

According to the *Community of Inquiry* framework of Garrison and Arbaugh (2007), effective learning can be promoted by three overlapping elements: social presence, cognitive presence, and a teaching presence characterized by collaborative and constructive discourse. The partnership used this concept to guide the pedagogical foundation of the study group format, fostering a unique mode of interaction that differed significantly from traditional classroom instruction. The goal was to enable students to receive individual attention, ask questions, and benefit from student-student interactions facilitated by instructors.

Faculty-Student Interaction: Building a Sense of Community

Implementation of the study group infrastructure was systematic and purposeful. The groups were scheduled between classes at pre-established times and days that were convenient for both students and faculty. At the beginning of the collaboration, faculty would visit these groups to answer questions and talk to students. Later in the program's development, at the initiative of a physics professor, faculty members began to hold their office hours at the center. Some professors chose to maintain a regularly scheduled presence, while others utilized the center less frequently for reviews. One year after the office hour initiative began in 2012, program data revealed that student attendance at the SEC had increased by an additional 14%.

The study group format enabled a mentor relationship that benefited both students and faculty. Faculty mentorship provided students with the opportunity to interact more closely with their professors and to observe them as role models. Their professors' presence in the center also reinforced its image as "the 'educational workplace' of serious professionals" (Potacco & DeYoung, 2007, p. 21). For their part, faculty mentors expressed appreciation for the opportunity to work with their students in a supportive and public environment with access to learning resources. In addition, faculty mentors provided mentoring to peer tutors by providing guidance and modeling strategies in pedagogy and communication. The ability of mentorship to positively affect student outcomes has also been widely supported in the literature (Beisser, Kurth, & Reinhart, 1997; Brownell & Swaner, 2010; Cox and Orehovec, 2007; Fuentes, Alvarado, Berdan, & DeAngelo, 2014; Finley & McNair, 2013; Kuh, 2008; Kuh, O'Donnell, & Reed, 2013; Tinto, 2004, 2006).

Using Faculty Expertise as a Resource

Faculty support and engagement were essential in promoting and supporting the success of the SEC. Assessment of participation revealed that faculty members were instrumental in promoting students' initial adoption of the program. Once students observed tangible improvements in their grade(s), participation became more self-motivated. Grade and other outcome measures of the program were also analyzed independently by faculty and the administrative coordinator to determine the efficacy of the program. Corroboration by these multiple sources of evidence motivated the faculty to continue to refer their students to the center and the university administration to provide additional funding.

Faculty support and engagement were also essential in creating the academic infrastructure upon which the SEC would be built. The faculty provided needed expertise in defining and guiding the emerging culture and student support initiative of the center. Since the center had no budget during its first few years, faculty served a critical role in supplying books, tests, models, multimedia equipment, and study guides for students and selecting hardware and software germane to course pedagogy and content. In addition to donating physical resources, faculty played the vital role of recommending their outstanding students as tutors, based on their academic excellence, communication skills, and leadership abilities.

The most important benefit realized from the partnership built between faculty and the administrative staff is that it creates a type of synergy that supports student success and fosters a sense of community (Potacco & DeYoung, 2007). Frequent positive interactions with faculty, staff, and peers influenced students to continue utilizing the center. Faculty and the administrative staff energized the process and validated their efforts through assessments. The assessments validate the partnership's belief that their observations are consistent with research demonstrating that community building plays a significant role in motivating student persistence in pursuing academic support (Tinto, 1997, 1998, 2000, 2008).

Assessment: Adding Value through Validation for the Program

This partnership's focus on assessment provides important information on outcomes for participating student attendance, grades, and retention. This was extremely important information given that the student population discussed in this case consists of students enrolled in William Paterson University's STEM and STEM-related courses, which are known for their quality and rigor. The population of students taking a science course is typically 47% to 50% minority, 58% female, 96% undergraduate, and 76% commuters. The average age of these students is approximately 22.5, and their overall average GPA is 2.84 (Potacco & Ramirez-Levine, 2013). The proportion of students taking a science course by class level in a semester is 43% seniors, 26% juniors, 21% sophomores, and 11% freshmen.

The partnership assessed student attendance at the SEC in order to evaluate the efficacy of individual initiatives and the center's progress over time. Based on longitudinal student

attendance data, student contacts increased from 1,478 to 18,980 (1,184%) since the partnership began in the fall semester of 1991. Approximately 75% to 80% of these contacts consisted of participation in study groups, which were 1.25 hours in duration and involved direct contacts with faculty or peer facilitators and peer students. In later years, a digital reporting system was designed to record student attendance in a database compatible with the university's database. This database provided faculty with a tracking system that enabled real-time feedback related to student attendance at the center. Data compiled through the database also provided the center with a means of analyzing the relationship of the intervention to retention and grade outcomes.

Retention

Retention data analyzed over six years demonstrates that students who attended the center had a significantly higher retention rate, compared to students who did not attend the center (Potacco & Ramirez-Levine, 2009, 2010, 2011, 2012, 2013, 2014). Retention rates were measured based on whether students enrolled in a high-risk science course in the spring of each year and re-enrolled at the university the following fall. Based on a 95% confidence interval from historical data, the retention rate of students receiving academic support in these high-risk science courses ranged from 4.69% to 4.71% higher than that of students not receiving academic support.

Grades

The analysis of grade outcomes over six years demonstrates that a significantly higher proportion of students in high-risk science courses earned satisfactory grades, including A's, B's, and C's, than students who did not come to the center (Potacco & Ramirez-Levine, 2009, 2010, 2011, 2012, 2013, 2014). Based on a 95% confidence interval from historical data, the proportion of students receiving satisfactory grades among students receiving academic support in high-risk courses ranged from 10.5% to 14.5% higher than that of students not receiving academic support.

Lessons Learned and Conclusion

There were both expected and unexpected benefits of the partnership between the faculty and the Science Enrichment Center, all of which contribute to an understanding of how to create a successful student learning center.

Holistically, an effectively designed partnership builds a bridge between the faculty and administration that helps coordinate and augment the student retention efforts of both entities. It also provides an essential foundation for a learning center that can fulfill the diverse needs of students, faculty, and the university. Within this relationship, members must respect each other's strengths and share ownership through collaborative decision-making. Faculty are content experts in their discipline and set academic goals and expectations for students. In contrast,

learning center administrators have expertise in support and administration. They have the responsibilities of supporting students' efforts to meet the academic expectations set by faculty, relieving faculty of the administrative tasks associated with the operation of a learning center, and providing program feedback. A well-coordinated alliance can use this feedback to fine-tune their individual and/or collective efforts.

Important lessons were learned during the implementation phase of this center. Importantly, the proximity of the learning center to faculty, students, and resources facilitated the ability of these groups to communicate, meet, coordinate, and share resources. Faculty appreciated their ability to observe and facilitate their students' learning and influence the center's operation. Students appreciated the convenience of meeting with their professors in a group outside of the classroom. The center's staff appreciated the assistance, insight, and academic direction provided to them by the faculty.

As the partnership developed, it also became obvious that the faculty were the most influential recruiters for the center. Students consistently revealed that they had come to the center based on the recommendation of their faculty and/or to attend a study group with their professor. As the center developed, faculty continued to promote adoption by helping the center develop highly effective promotional incentives, such as the Coupon Program, that motivated students to seek support (Potacco, Chen, Desroches, Chisholm, & DeYoung, 2013). Concomitant with faculty's investment of effort and trust, the center recognized its obligation to consistently and accurately assess and document the outcomes of initiatives through reports and publications.

The benefits of partnerships can extend beyond the internal community in which they exist. The demonstration of common goals and a strategic alliance between faculty and administrators has the capacity to enhance respect across the community and contribute to the collaborative spirit of the larger community. On a broader scale, partnerships provide the opportunities for faculty and the administrative staff to engage in innovative collaborative research that can be shared with the larger educational community in multiple areas related to academic success and retention (Potacco & DeYoung, 2007; Potacco, Chisholm, Ramirez-Levine, & DeYoung, 2008; Potacco, Chen, Desroches, Chisholm, & DeYoung, 2013). In this case, research and the partnership also provided a support structure for grant programs focusing on student success, such as the National Science Foundation's Increasing Student Success in Biology and Biotechnology (ISSBB) and Garden State Louis Stokes Alliance for Minority Participation (GS-LSAMP) grants.

Most importantly, partnerships serve the needs of students. Faculty and learning centers have the potential to affect student outcomes when the factors that foster quality interaction are applied. Faculty and learning specialists can assume "critical roles as agents of socialization" (Fuentes, Alvarado, Berdan, & DeAngelo, 2014) and mediators of learning through their mentorship. As stated by Tinto (2006), though "student retention is everyone's business, it is now evident that it is the business of the faculty in particular. Their involvement in institutional retention efforts is often critical to the success of those efforts" (p. 5). In agreement, when faculty and support centers fully invest in the common, exclusive goal of student success by

partnering, they have the potential to create innovative practices in student success that synergistically exceed the efforts of each member independently. The benefits of this collaboration have the potential to impact students and faculty at the micro level, institutions at the macro level, and the higher education community at the mega level.

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The Go-to Faculty: An Extra Resource for Student Success

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A few years ago, as an English professor was making his way through a classroom building, a student buttonholed him. He wanted to know if the professor would take a look at a paper he was writing. The request took the professor by surprise, even shocked him. The student was not in any of his classes and knew him only because the professor had covered a colleague's class one day. He gave the encounter little thought until years later, when he heard from two colleagues who had had similar experiences. One, a chemistry professor, said that students of other professors often came to her for help. The other, a librarian, told him that students came to him for help with class material.

What was going on here? As the English and chemistry professors mentioned above, we think we have an answer, along with a tool to promote student success in colleges and universities across the country.

Many college students need help—with English, with chemistry, and with all kinds of other subjects, as well as with time management, study skills, and more. Furthermore, as a review of research by Pascarella (1980) has shown, there is reason to believe that interactions between faculty and students outside the classroom can enhance persistence, academic achievement, and other positive outcomes. In light of such intuitions and research, we—especially those of us at regional comprehensives—frequently ask ourselves, "Why don't students talk to someone?" What our experiences clearly show is that some students *are* talking to people. The people they are approaching, however, are often not the ones we would expect: their own professors or advisors, tutors, or the staff in academic resource centers. Instead, they are seeking—and finding—informal resources, specifically professors who come across as approachable and friendly.

Many students find professors intimidating. Drawing on her interviews with community college students (whose perceptions probably do not differ much from students at four-year schools, especially since many eventually transfer to four-year schools), Rebecca Cox (2009) noted that students' experiences with professors "reflected an intimidating distance between professor and student." Cox heard comments such as these:

> It got to where I did not feel comfortable approaching him about anything, because I felt like he was this so-smart guy that I'm going to look really stupid

> in his eyes if I ask him any questions at all. And so I don't feel comfortable asking him anything.
>
> There's kind of something in him that, I don't know, makes me kind of hesitant to say something to him. He's kind of friendly, but it's just, I don't really know, something about him is just . . .

Such remarks may reflect media stereotypes of professors, but they also have a basis in reality. After all, some professors *are* intimidating. They nostalgically recall the old "Look to your left; look to your right" line that their professors tossed at them when they were undergraduates, and some of them probably resurrect it in their own classes. Privately, they dismiss efforts to promote student success by saying that some students are just not ready for college—or, perhaps, even that some people are just not cut out for college. When asked for their ideas for how best to shape enrollment, they call for increasing admission standards. Warm and welcoming they are not.

The need for a strong, positive faculty presence in students' lives may be greater than ever. Vicki Baker and Kimberly Griffin (2010) have observed that today's colleges and universities serve many first-generation college students, who may be especially in need of faculty support, and employ itinerant part-time faculty, whose job situations tend to preclude relationships with students. In addition, in their systems for tenure and promotion, today's higher-education institutions place an emphasis on research rather than on interaction with students. Furthermore, Baker and Griffin note, "rising costs have led students and their families to expect a level of service that matches their investment."

Formalizing the Informal System

Knowing that students were seeking help from a select group of professors instead of from their own instructors, we—as dean and associate dean of our university's College of Arts and Sciences—moved to formalize the informal "system" that was already in place. We knew most of our faculty colleagues, including many who were passionate about student success, and invited several of these colleagues—from Math and Computer Science, Chemistry and Physics, History, Geology and Geography, Psychology, and other departments in the College of Arts and Sciences—to a meeting to discuss the idea. Our fellow administrators in the School of Education and the School of Business tapped a few of their faculty colleagues, as well.

The result was something we call the "Go-to Faculty," which we describe as an extra resource for students. The key word here is "extra." After all, students already have faculty, as well as advisors, and the last thing we want to do is to suggest that this group replaces any of those people. Still, the reality is that many students do not feel they are getting what they need from their instructors and advisors, as our experiences showed. In fact, a sizable percentage of students never even seek help from their faculty (Griffin et al., 2014). The *extra* resource of the Go-to Faculty only increases the likelihood that students *will* seek help from faculty. We have a variety of reasons for this belief:

We have explicitly characterized ourselves as helpers. Some students may not see faculty members as resources who can help them outside class. After all, few if any of their high school teachers had anything like "office hours," and the expectation at their high schools was probably that they should visit guidance counselors, not teachers, for help with academic planning, studying, choosing a career, and so on. Our name, along with our publicity, makes it clear that we are faculty whom students can feel comfortable consulting for help.

We emphasize accessibility, visibility, and friendliness. The two dozen or so Go-to Faculty members come from a variety of departments and have offices in most of our classroom buildings. Most members have our fliers on their office doors, so students can easily identify and find them. In promoting the initiative, we have put our faces—both on posters and in person—in front of students and reached out as approachable people.

We look like our students. The Go-to Faculty is diverse in race, gender, age, and discipline, just like our students. We are men and women, some early in our careers, others further along.

The mere message that this program sends—that is, that faculty members care about students and their success in college—carries a number of benefits, even for students who never approach a Go-to Faculty member. Astin (1993) notes that "Student Orientation of the Faculty produces more substantial direct effects on student outcomes than almost any other environmental variable" (342). Those variables include students' satisfaction with faculty and the college experience as a whole, as well as attainment of the bachelor's degree and improvement—as reported by students themselves—in writing, critical thinking, and other areas.

Putting the Go-to Faculty in Publicity and Branding

We could have simply built this program and waited for the students to come, but this passive approach almost certainly would have left us with all of our natural passion for student success and few if any students to benefit from it. Although some students clearly are reluctant to seek help from faculty, research suggests that the right approach can bear fruit. Perrine, Lisle, and Tucker (1995) found that a "supportive statement" on a syllabus was more likely to inspire students to seek instructor assistance than a statement that was merely neutral.

The Webpage

Publicity has been essential, not only to spreading the word about the program, but also to framing it as an opportunity for students to get help and support from accessible, friendly people who look like them. We started with some standard publicity: a webpage and fliers, which we posted all over campus. Both feature pictures of all of the Go-to Faculty members, along with brief descriptions of the program. The text at the top of the webpage reads:

> Wouldn't it be great if college came with a go-to person—someone you could call or visit whenever you had a question about credit hours, a problem with a

> class, or just a friendly face?
>
> Now it does.
>
> In fact, UNCP comes with more than 20 of these go-to people. We call them our Go-to Faculty. They are friendly people who care about students and want to see them succeed. They also have answers to your questions, or they can help you find them.
>
> If you already have a great relationship with some of your professors or an advisor, you can continue seeing them, of course, but if you still need a go-to person, call, e-mail, or visit one of the helpful people below. They're here for you. (Go-to Faculty, n.d.)

Face-to-Face

We also seized every opportunity to show our faces and meet students, as well as parents. Over one summer, some of us appeared in person, accompanied by a trifold board, at several New Student Orientation fairs, where we met students, along with parents, and passed out our fliers. At the beginning of each academic year the program has been in place, we have gathered some members to appear at a presentation open to all first-year students. We also have visited Freshman Seminar classes, worked Welcome Tents during the first week of the fall semester, staffed a booth at a community event called Pembroke Day, appeared in a video welcoming first-year students to the university, and promoted the Go-to Faculty through a "stamp stop" program in which students completed stamp cards by visiting various places on campus. One fall, several of us came to the university's cafeteria and circulated through the crowd, introducing ourselves and sitting down to join some students. On this occasion and others, we have worn polo shirts with our Go-to Faculty logo on them, increasing our visibility, as well as the visibility of our brand.

Helping Hands

A student assistant has helped us take all this publicity up a few notches. A mass communication major with a specialization in public relations, Samantha Langley has drafted personal profiles of all of the Go-to Faculty members for our website. With an emphasis on "personal," she has included details—hometowns, hobbies, and such—that we hope will help to draw students to us. She also has featured us on a Facebook page and designed cards about the Go-to Faculty to distribute to administrative assistants and other university staff (who in turn can direct students who need assistance to us). One spring semester, during a "Helping Hands" event that she planned, Go-to Faculty members and Samantha staffed a booth at the high-traffic University Center, where we distributed fliers and pens (complete with the Go-to Faculty logo), described the program, and answered students' questions right on the spot or followed up with appropriate campus staff. One outcome was a confirmation that our publicity blitz has paid off: several

students said they were familiar with the Go-to Faculty, having heard of it at a gathering where we appeared or via some other means.

Creating Faculty-Student Dialogue

Thanks no doubt to these promotional efforts, the Go-to Faculty initiative has come to carry the reputation it needs to succeed—that is, students view the participating faculty members as a resource they feel comfortable consulting when they need help. Indeed, we have had students approach us with phrases like "You're one of the Go-to Faculty, right?" This approach confirms that our publicity has registered with students, but it also suggests something crucial about the value of the initiative. By referring explicitly to the initiative by name, it seems, students are confirming exactly what we had suspected—that they are not always comfortable approaching faculty—but then we are not just any faculty. We are the "Go-to Faculty." When students open a conversation with us in this way, they might as well be saying, "It's OK for me to talk to you, right?" Of course, it ought to be OK for students to approach *any* of the university's faculty, and our initiative was never intended to steer them away from any of our colleagues. By identifying one group of faculty and explicitly designating them as helpers, we have chipped away at the wall that too often separates students from faculty.

The resulting openings in that wall have resulted in some encouraging dialogue. In some cases, students approach faculty who are specifically identified as Go-to Faculty. For example, due to our strong online presence, a prospective student who planned to major in sociology reached out to a Go-to Faculty member to seek assistance with advising. In addition, equipped with extra tools to assist students, many of the Go-to Faculty members are sufficiently confident to seize opportunities to be more intrusive when approaching students. After learning that one student stopped attending all of her classes because she planned to join the Air Force, a Go-to Faculty member scheduled several meetings and a phone conference, eventually retaining the student at UNCP. Another Go-to Faculty member reported that she reached out to a student in her class who reported that she was facing a dire situation at home. The Go-to Faculty member helped the student, who had no place to stay and no transportation to campus, to make contact with Counseling and Psychological Services (CAPS), which, in return, provided housing options for the student. The student welcomed the extra assistance and responded to the faculty member, saying, "[T]hank you for the help, guidance, and encouraging message you have provided to me," and "[T]hank you from the bottom of my heart."

With the many positive outcomes possible through good faculty-student interaction, the Go-to Faculty understand the value of offering extra assistance to students. In fact, as one Go-to Faculty said, "While we may not be able to save every student who is on the verge of dropping out, I am comforted by the reality that every single one we retain makes a huge difference." With this sentiment at the heart of the Go-to Faculty initiative, faculty are poised to have a positive impact on student success.

We have not tracked these students' experiences after these initial contacts and thus have

no hard data on persistence and other outcomes. Still, if research on faculty-student interactions is any indication, these contacts could be productive. In a review of research, Pascarella and Terenzini (2005) notes that most of it "suggests that student-faculty interactions that tend to reinforce or extend the intellectual ethos of the classroom or that focus on issues of student development can have positive implications for general cognitive development during college." A study of female college science students shows that 45 percent of "Stayers" reported a great deal of encouragement from their teachers to major in science, whereas only 24 percent of "Leavers" reported this level of encouragement (Rayman & Brett, 1995). The same study showed that 70 percent of "Stayers" had a faculty mentor while only 53 percent of "Leavers" had such a mentor. Furthermore, Pascarella and Terenzini (1991, 2005) note that some research has shown a positive relationship between student-faculty interaction outside the classroom and persistence from the first to the second year of college, although it is not clear whether interaction leads to persistence or whether students likely to persist are simply more likely to interact with faculty. Still, even if the latter is often or sometimes the case, it is hard to see how more interaction with faculty would not be a good thing. Astin (1993) reports a positive relationship between "faculty-student involvement" and students' satisfaction with faculty (282).

Even just a few interactions of students with Go-to Faculty may pay significant dividends. Noting research showing that an association between informal faculty-student contact exists but shows diminishing returns, Pascarella (1980) writes: "Such a finding suggests that if faculty do positively influence the value which students attach to academic achievement through their mutual informal interactions, it is the initial interactions which may be most influential." It may not even be the Go-to Faculty member who makes the difference. By merely breaking the ice, showing that faculty can be warm and supportive, an initial faculty interaction can lead students to seek connections with other instructors.

Linking the Faculty to Student Success and Retention

The program has evolved in ways we did not expect, ways that have turned out to be very positive. For one thing, we have seized the opportunity to give our team extra tools they can use when students approach them. Through webinars, presentations by staff or faculty, and, in one case, a talk by a student who had received an award for his success in overcoming adversity and succeeding, the members of the Go-to Faculty have learned about the university's CARE team (which works with students facing significant personal obstacles), a campus food pantry, financial aid, advising, resilience in students, and more. Thanks to these training opportunities, the Go-to Faculty are some of our most informed faculty when it comes to the kinds of issues that affect students.

In another positive development, the Go-to Faculty program has become a go-to resource not only for students, but also for us as administrators. At most institutions, efforts to enlist faculty for retention initiatives take the form of open invitations and perhaps the occasional personal plea. Here, we have several student-centered faculty members who have accepted an

invitation to be part of a team created for the sole purpose of promoting student success. When we need faculty to participate in an event or an initiative, we can turn to our "go-to" colleagues, a kind of academic special-forces team we can deploy for strategic initiatives.

Lessons Learned

We have been pleased with the process of creating and promoting the Go-to Faculty, as well as the outcomes we have seen, but we also have taken some lessons from the experience. For example, if we had to assemble a team from scratch again, we might have asked chairs to nominate candidates for the team or even asked faculty to nominate themselves, thus broadening the initiative and perhaps deepening the pool of possible participants. If the process is not handled delicately, some might perceive the team as a group of administrators' favorites. Still, we would contend that the administrators assembling the team should have final say, since the personalities of those involved must be appropriate for the kind of work that the team is doing with and for students. A professor whom a chair nominates simply to "give her something to do" or to "make up for his lack of scholarly activity" may or may not have the approachability, demeanor, and commitment to student success necessary for the success of this initiative. If students begin telling other students that one or more of the Go-to Faculty really ought to be called Run-from Faculty, the entire initiative could suffer.

Our team is diverse in some important respects but not as diverse as it could be in terms of discipline. Starting from scratch, we probably would have tried to make sure that every department, perhaps every major, had at least one Go-to Faculty member, thus providing students with resources they could consult for guidance on choosing majors, preparing for careers, and generally navigating through various programs.

Finally, we would consider formalizing the Go-to Faculty a bit further, perhaps establishing course reductions for members of the team or even making them the designated advisors in their departments. This approach could help to make time for the important work that the Go-to Faculty participants do, as well as the training they receive, while also rewarding them for their contributions.

Such tweaks might improve buy-in or outcomes, but the basic idea of the Go-to Faculty, we believe, is sound. By tapping into powerful and positive resources—that is, some of an institution's most student-friendly faculty—and providing training to help better equip them for assisting students, we have increased the chances that our students will succeed.

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“Failure Made Me a Better Learner!”: Grit Instruction in a Gateway Course

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I realized what has made me the learner I am today: failure. Failure made me a better learner because it changed the way I wrote papers.

Janeil was in a class that everyone would expect would make him a better writer—introductory English composition. However, his class went far beyond what many may see as traditional composition instruction based on rules and structures; it was aligned with an experimental curriculum that incorporates instruction on noncognitive mental skills as a means to enhance student success. He, and a number of his classmates, made it clear that this first-year composition course resulted in success strategies that would cut across their academic lives.

This chapter describes the faculty-driven initiative that led to Janeil’s observations. It describes an experimental course redesign, one that explores whether integration of mental skills training (i.e., noncognitive skills) into an English composition course can enhance a student’s ability to develop “grit”—the resilience and tenacity necessary for college success.

Below you will find a discussion of Eastern Washington University’s mental skills training (MST) curriculum and preliminary observations associated with this program. We hope this discussion will offer other faculty guidance should they consider adapting our strategies at their institutions. Ultimately, it is our hope that information presented in this chapter will result in rigorous conversations about the value of such programs, how we can best teach noncognitive

skills and psychological resilience (i.e., grit[1]), and why freshman-level courses such as English composition are an appropriate place to embed this curriculum.

Theoretical Background

Academic Success and Noncognitive Attributes

Academic success is a complex phenomenon that can be shaped by a wide variety of factors extending beyond the traditional notions of academic skills and content knowledge (Rosen et al., 2010). In the early 2000s Nobel Prize–winning economist James Heckman (Heckman and Rubinstein, 2001) popularized the term "noncognitive skills" when he argued that factors such as motivation, time management, and self-regulation are critical for life outcomes, including success in both the labor market and educational settings. Heckman referred to these factors as noncognitive because they are not measured by commonly administered cognitive tests such as IQ or academic examinations.

In a wide range of subsequent studies, noncognitive attributes are shown to be related to successful academic outcomes. In a comprehensive review, Farrington and colleagues (2012) identify a host of noncognitive factors that appear to influence academic performance including persistence, resilience, goal-setting, help-seeking, cooperation, conscientiousness, self-efficacy, self-regulation, self-control, self-discipline, mindset, effort, work habits, and organization. Likewise, Duckworth and Seligman (2005) suggest that academic performance depends in large part on students' self-control. They claim that measures of self-discipline are far more predictive of positive academic outcomes than are measures of IQ. Similarly, Dweck and colleagues (2011) coin the term "academic tenacity" as one of the keys to academic achievement. They suggest that educational interventions and initiatives that target these noncognitive factors can have transformative effects on students' experience and achievement and may have long-lasting effects on core academic outcomes such as GPA and test scores.

Thus, it is clear that in addition to content knowledge and academic skills, students must develop sets of "noncognitive" behaviors, skills, attitudes, and strategies in order to perform well academically. However, few in academia have taken Dweck and colleagues' (2011) advice and developed interventions that specifically target this skill set, despite the apparent need for new curricular models. Mental skills training (MST) is one such model. While it has been used extensively in sport and military environments for years and is rooted in noncognitive theory, MST has been used only sparingly in academic settings.

[1] "Grit" is shorthand for a constellation of characteristics describing noncognitive skills. Angela Duckworth (2013) is widely credited with coining this term, perhaps because of the popularity of her TED Talk. We use the term to refer to the cluster of traits that we studied rather than as synonymous with any single trait.

Academic Success and Mental Skills Training

Enhancing performance has long been a focus for applied sport psychologists working with sports performers (e.g., Orlick, 1986; Vealey, 2007). This is also reflected in the amount of research literature dedicated to the development and evaluation of MST interventions (Brewer and Shillinglaw, 1992; Daw and Burton, 1994; Hanton and Jones, 1999; Shoenfelt and Griffith, 2008). Eccles et al. (2011) describes a theoretical framework for the self-regulation of athletes' emotional states, which suggests that psychological skills (e.g., goal-setting, relaxation, imagery, and self-talk) are required to enhance psychological abilities (e.g., the ability to relax, focus, and be confident). These psychological abilities allow performers to achieve optimal mental states for the tasks in which they engage, and evidence suggests that systematic MST can enhance athletes' ability to use psychological skills in stressful competitive settings (Daw and Burton, 1994). For example, Brewer and Shillinglaw (1992) report that participants in a series of four psychological skills training workshops improved their knowledge of psychological skills, placed more importance on these skills, and used them more frequently after the intervention. Daw and Burton (1994) use case studies to assess the effectiveness of MST intervention including goal-setting, imagery, and arousal regulation for collegiate tennis athletes and again found improvements on several cognitive and performance variables (including state and trait measures of confidence and anxiety). Similarly, Hanton and Jones (1999) demonstrate that swimmers' directional interpretation of anxiety symptoms become more facilitative following an MST intervention focused on goal-setting, imagery, and self-talk. Using a single-subject design, Thelwell and Greenlees (2001) explore the effectiveness of an MST package (including goal-setting, relaxation, imagery, and self-talk) on gymnasium triathlon performance. Results again demonstrated the efficacy of MST, with all five participants increasing their use of mental skills and improving their triathlon performance.

MST has also been shown to enhance psychological resilience, stress hardiness, and performance in the military. For example, Cohn and Pakenham (2008) conducted a randomized trial with basic trainees in the Australian Defense Force and found better cognitive coping and lower psychological distress relative to a control group. A U.S. replication of this study in a group randomized trial did not demonstrate lasting positive effects from an adapted version of this brief training; however, a more in-depth training focused on performance psychology did demonstrate enhanced performance, use of mental skills, and other positive outcomes over time (Adler et al., in press).

The application of MST-related training in academic settings with an emphasis on mental health outcomes has also undergone preliminary exploration. For example, the Penn Resiliency Program has been developed and tested for use with adolescents in public schools. This training addresses the relationship between thoughts, feelings and behaviors, the need to challenge automatic negative thoughts and irrational beliefs, communication skills, positive thinking, and energy management. Randomized studies on the Penn Resiliency Program demonstrate that this intervention, relative to nonintervention controls, reduces the risk of developing depression

(Brunwasser, Gillham, and Kim, 2009); however, the impact of this intervention on academic performance is not known. This training was also recently adapted for use in the U.S. Army (Reivich, Seligman, and McBride, 2011), although the efficacy of the training is still being assessed (Lester, McBride, Bliese, and Adler, 2011).

Taken together, these findings indicate that MST can have a beneficial influence on performers' awareness, knowledge, and use of psychological skills, as well as their performance in stressful situations, and may be a useful tool for attending to the success and retention-related needs of students at our university. However, we are unaware of any empirical MST intervention studies conducted specifically with higher-education populations. We also believe that the use of the MST model can address a gap in the theoretical foundation of many of our existing student success programs. Thus, the purpose of our work is to explore the utility of the MST model to enhance the academic success of undergraduate students at our institution.

Eastern Washington University (EMU) has a number of programs designed to assist underserved members of our undergraduate student population, including a federal TRIO grant,[2] a local program that is designed to support conditional admit students, a robust PLUS program, a fully staffed academic support center, and a writing center employing best practices. Nevertheless, even with all of the student-support programs in place at our institution, student retention remains a significant ongoing concern. Retention rates for first-time, full-time freshmen to year two is 77.4%; however, data also indicate that our four-year graduation rates for first-time, full-time freshmen are in the range of 21%. Six-year graduation rates continue to be in the 46–48% range.

While our academic support staff is excellent, most traditional support programs on our campus rely on academic skills and time-management training to elicit academic success. This type of training has shown to be modestly effective in enhancing student outcomes (Bail, Zhang, and Tachiyama, 2008; Bender, 2001; Credé and Kuncel, 2008; Gettinger and Seibert, 2002; Nonis and Hudson, 2010; Onwuegbuzie, Slate, and Schwartz, 2001; Weinstein and Underwood, 1985). However, the academic support literature also reveals that study skills are only a part of many contributing factors which lead to academic success (Helms and Marino, 2010).

Clearly, to be effective, learners must not only possess a wide array of study skills, they must possess the self-awareness, cognitions, resilience, and motivation to know when, where, and how to apply these skills (Helms and Marino, 2010; Pintrich and De Groot, 1990; Smith, 1991). Therefore, we began to search for different models that may provide a more robust impact on student retention and academic success.

To summarize our theoretical foundations, we believe most student success models look like Figure 1.

[2] Federal TRIO Programs provide student outreach and services for individuals from disadvantaged backgrounds.

Figure 1. Study skills training

Based on our experience, this sort of traditional model is missing some significant foundational pieces. Thus, it is our intent to test the model shown in Figure 2.

Figure 2. Proposed model for enhancing student success

In other words, we propose that noncognitive mental skills provide the foundation for psychological resilience or grit. We believe that this resilience will in turn provide students a better chance to develop effective study skills. Effective study skills should then result in deeper content knowledge and eventually produce more academically successful students.

Eastern Washington University's Grit Initiative

Aligning Course Design with Institutional Context

Eastern Washington University (EWU) is a regional, comprehensive, rural university located about 20 miles from a midsize city. As of 2015, its enrollment is roughly 13,000 students, including those at satellite campuses and in distance programs. The minimum admissions index is 25, and the university has a conditional admit program for those students who do not automatically qualify for admission. Up to 10% of students are admitted under this process. EWU's tuition is the lowest of the four comprehensive universities in the state at $12,600. In fact, the university charges less for tuition than any of the community colleges in the immediate area. EWU's freshman-to-sophomore retention rate is 77.4%. In 2007, its four-year graduation rate was 21% while the six-year rate was 41%. The institution has a mission of access; this is reflected in its first-generation and underrepresented student population.

The nonwhite student population of the university is 28%, which is significantly greater than that of the surrounding county. EWU has a high percentage of students who are the first in their families to earn a college degree; 43.6% of all students are first-generation. Many of the university's students come from lower to lower-middle class backgrounds; more than 40% of students are Pell Grant–eligible. The university draws a majority of its population from the immediate area, as students are in large part from the nearby urban center and the surrounding rural, agricultural-based communities. Overall, the population typically comes from one of three locations—a large city four hours away, the midsize city that is proximate, and rural schools throughout the state. Unmarried, traditional-age students living more than 50 miles away are required to live on campus.

Aligning Course Redesign with Faculty Expertise

Dr. Jon Hammermeister, an AASP-certified sport psychologist and the designer of our curriculum, has applied mental skills training (MST) principles with Olympic and professional athletes and U.S. Army soldiers. He was part of three U.S. Olympic team staffs, and worked extensively with Major League Baseball and as a senior researcher for the U.S. Army's Center for Enhanced Performance (ACEP).

In the fall of 2010, Dr. Hammermeister conducted several correlational studies examining the relationship between mental skills (e.g., goal-setting, self-talk, self-confidence, attentional and emotional control) and the psychological resilience, motivation, and academic success of first-generation college students (FGCS), who constitute just under 50% of the undergraduate student population at EWU. Results of these studies were overwhelmingly consistent in displaying a robust link between MST and other variables related to resilience and academic success. For example, in a representative cross-sectional sample of FGCS (n=286), strong associations were found between a variety of MST variables (with goal-setting being the most

significant) and psychological resilience, ability to deal with college-related stress, study habits, and a number of other indicators of academic success, including GPA (Jordan et al., 2012). The precise mental skills that were measured were emotion control, attention control, self-confidence with regard to cognition, overall self-confidence, self-efficacy, motivation (intrinsic and extrinsic), and surface-level vs. deep approach to studying.

Armed with this correlational data, it now made sense to see if we could design interventions to purposely enhance mental fitness skills and psychological resilience with the ultimate intent of improving academic success and retention. In 2011, Dr. Hammermeister piloted a stand-alone MST course with first-generation college students (FGCS). This course taught MST tools such as goal-setting, positive self-talk, and positive imagery and then showed participants how to utilize these tools to enhance performance-related skills such as self-confidence, concentration, composure, academic motivation, and psychological resilience. Findings from this small pilot study indicated that this curriculum was a promising practice for developing attitudes, beliefs, and strategies associated with enhanced psychological resilience and academic success (Hammermeister et al., 2012). Specifically, students in the MST intervention group showed greater concentration, goal-setting ability, positive mental imagery, self-confidence and relaxation than did FGCS assigned to the control condition. Students in the treatment group also displayed more commitment to their academic work, more stress hardiness, and a better ability to deal with academic challenges relative to controls (Hammermeister et al., 2012).

As faculty became aware of the success of the pilot project, campus-wide interest grew. Ultimately, four faculty members formed a collaborative team to broaden the scope of the pilot and to assess the impact of a more widespread approach. In order to capture as many freshmen students as possible, English composition courses were identified as a logical place in which to house this next iteration of our MST process. In fact, composition courses were deemed not just a convenient place to locate the MST curriculum but an appropriate and natural location for this work. Composition courses are essential to university efforts to promote student success, as they are not only a gateway into the university but also focus on skills and habits of mind that are key to success across the university curriculum.

Aligning Course Design with Program-Level Goals

At Eastern Washington University, much of the responsibility for acculturating first-year students to the university is delegated to the English Composition Program. While the institution's mission is to provide college access for underrepresented and first-generation student populations, a first-year experience program that seeks to ease the transition of such students into the academic community has yet to be established. Further, the university lacks a Writing Across the Curriculum program that could help students maintain the academic skills gained in a first-year experience program. The English Composition Program therefore seeks to

provide courses that not only teach writing, but also effectively introduce and sustain student engagement in academic discourse practices such as reading and research.

The first course in the English Composition sequence enables students to write about, critically read, and discuss academic texts; the second course in the sequence requires students to engage with an academic conversation (ideally within each student's field of study) and to produce original research in relation to that conversation. Further, in addition to teaching students the literacies needed for success in college, the 10-week (quarter) course needs to engage students in the habits of mind necessary for success in the university. This effort is consistent with best practices in the field of composition and rhetoric, as established by literature in the field, as well as the learning outcomes established by the professional organizations of the discipline, including the National Council of Teachers of English and the Council of Writing Program Administrators (*Framework for Success*, 2011).

Aligning Course Redesign with Instructor Training

Composition courses at Eastern Washington University, as at many universities, are largely taught by graduate students. This is particularly true in the case of English 101, which is the introductory composition course. Each fall, 14 new graduate student assistants (GSAs) are trained and given the responsibility to lead a section of English 101. Graduate student instructors therefore make up the teaching staff that participates in implementing the experimental course redesign. For our redesigned course, the selection of instructors began in the two-week training that GSAs receive before fall quarter. The new teachers were recruited and then selected according to experience, disposition, and interest. In order to recruit a set of GSAs to teach the MST-infused section of English 101, Dr. Hammermeister visited the pre-fall quarter training and presented on his work—directing the presentation toward the needs of graduate students, but also making clear the intention to incorporate MST into the curriculum of English 101. Numerous GSAs expressed interest in participating as pilot instructors. Interested GSAs were then selected on the basis of prior teaching experience as well as disposition. It was essential that the pilot instructors themselves possessed a growth mindset, as the researchers knew that this would be a challenging and unique teaching experience. Instructors were therefore selected on the basis of their enthusiasm for the project as well as their performance as an open-minded, inquiry-oriented individual in the instructor training session.

Aligning Course Redesign with Assessment

During the design phase, faculty discussed how to evaluate the course to determine if it met the stated goals and student-learning outcomes of the course while also supporting future student success through arming them with grit. We defined three separate treatment conditions plus a control group for assessing the effectiveness of the newly designed course:

- Condition 1: Push-in. MST materials are infused into a pre-existing English composition curriculum and delivered by an AASP-certified consultant and sport psychology-trained graduate students. All three data points were collected for 34 students over two quarters.
- Condition 2: Add-on. MST materials are delivered by English department graduate students with 10 weeks of training in MST. All three data points were collected for 54 students over two quarters.
- Condition 3: Grit Integrated. Materials are delivered by an experienced English department faculty member using an alternative curriculum emphasizing MST and grit. All three data points were collected for 25 students. This condition differed from the previous two by its comprehensive use of mental skill and grit-related themes in reading and writing activities.[3]
- Condition 4: Control. A "control condition" of English composition students who did not receive MST material. All three data points were obtained for 36 students over two quarters.

Students were assigned to groups based upon their sections. The Push-in, Add-on, and Control sections were chosen based upon instructor interest and upon the composition director's assessment of an instructor's teaching experience and comfort level with the material. Instructors who were both most enthusiastic and pedagogically prepared were in the Add-on condition as it required the ability to instruct concepts observed only once; instructors who were developing experience and comfort with both the material and with teaching were placed in the "Push-in" condition as they had more support; instructors who either had little interest or little teaching experience were in the "control" condition. The "Grit Integrated" condition was delivered by a tenured full professor with interest and autonomy over the curriculum.

Details of the Push-in and Add-on conditions. Push-in and Add-on sections used the basic composition curriculum, which includes readings and writing prompts from a mass-market composition textbook (*Joining the Conversation*) and a set of common writing assignments. Typically, the students write an essay exam based on questions synthesized from common themes across academic readings in the book. They next write a themed autobiography (i.e., with "work" or "literacy" as a theme). The third paper is a researched argument that is based on popular and academic sources. Finally, students write a reflection in which they examine their own learning and the range of rhetorical choices necessary while comparing these three contrasting assignments. Each of these papers goes through at least one preliminary draft, and instructors and peers respond to these drafts.

[3] We labeled this condition as the "grit" condition since students would be studying the concept of "grit," or noncognitive skills, as the topic of inquiry. MST curriculum was integrated rather than an add-on.

For the “infused” conditions (i.e., Push-in and Add-on conditions), a series of educational sessions utilizing MST techniques and methods deemed germane for English composition success were provided. In order to develop this curriculum, sports-psych and composition faculty worked together to coordinate overlapping goals, curricular scope and sequence, shared language, and data collection methods and schedules.

In the classroom sessions, students were introduced to basic MST concepts such as goal-setting, self-talk, self-confidence, emotion-control, and imagery with a specific emphasis on how these constructs can be applied to the overarching goals and role of English composition on our campus. Instructors used the content of the MST concepts as prompts for critical and reflective writing and speaking. For these conditions, a total of 10 sessions were presented over a 10-week academic quarter with each formal presentation lasting approximately 30 minutes.

Details of Grit Integrated condition. A substantially different English curriculum with an MST theme was utilized for the Integrated Grit condition. Because of the overlap between the goals of composition instruction and the function of composition at our university as a socializing gateway for all students, the “grit” condition was able to meet the goals of English composition through the use of the MST curriculum. Since introductory writing courses lend themselves to many types of academic inquiry, a curriculum in which students read and wrote about, as well as reflected upon, noncognitive skills also furthered the goals of the writing course. Introductory material was presented on the constructs of MST and grit (e.g., Duckworth et al., 2007; Tough, 2012). Students learned about MST and the importance of noncognitive skills in a fashion that retained congruence with the overall goals of an English composition course (i.e., to enhance academic literacy). For example, students read the research by Heckman, Dweck, and Duckworth and used the readings to hone their reading and writing skills. Students in this condition were exposed to five hours per week of MST/grit-related material and were given an additional 10 hours of homework that reinforced this.

Among the processes used in the Grit Integrated condition in which MST was the topic of inquiry is the self-conscious reading of academic literature. One of the first readings is a study by Nobel Prize–winning economist James Heckman (Heckman and Rubinstein, 2001), in which he considers why students who earn a GED, and are therefore, theoretically, as intellectually capable as those students who graduate from high school, do not perform as well as students who complete high school. This is true of all the elements Heckman examines including income, marriage, and incarceration. After reading this article individually and in groups, students listen to an NPR “This American Life” interview with Heckman in which the program host, Ira Glass, succinctly sums up Heckman’s finding that by saying that the difference between the GED and the graduation groups is that the students in the graduation group had the wherewithal to “keep their asses in their seats for four years” (Glass, 2012). This statement challenges student understanding of the role of intelligence in their academic careers. Following this, they read Paul Tough’s (2012) rebuttal of the “cognitive hypothesis.” Tough argues that this “cognitive hypothesis,” which posits that intellect is the most important determinant of success, is responsible for a wrongheaded approach to education. Still, students resist the notion that being

smart isn't the key to success Then, the class watches Carol Dweck's (2013) Stanford lecture on mindset, in which she demonstrates that people who believe that their intelligence is "fixed" and unable to grow are resistant to challenges and even lie about their performance, while people with a "growth mindset" embrace challenge and inquire about how to improve performance. Finally, the class reads several popular articles, views a TED Talk by Angela Duckworth (2013), and considers the notion of "grit."

While the students synthesized Heckman, Tough, Dweck, and Duckworth, they were also explicitly practicing mental fitness strategies. They articulated their long-term goals, intermediate goals, and process goals. As they approached the essay exam on their reading, they practiced positive self-talk, evaluated the difference between "victim" and "creator" language, visualized themselves succeeding during the exam, and planned for a reward once success had been achieved.

As they began their next assignment, the students started to connect the reading they had been doing with the skills that they were practicing. The second paper is an achievement autobiography. For this paper, students focus on a moment of accomplishment (these might be sporting events, video gaming scores, musical recitals, artistic projects) and consider at least three of the mental skills that they applied to achieve their success. They compose narratives of sacrificing time, money, or fun to achieve a goal. They write of their visualization techniques like imagining an entire gymnastics routine before a meet; psyching themselves up with talk; and building on previous failures. Their autobiographies animate the concepts they have been practicing and reading about in class. Then, when they think that they have united content and practice, they are challenged to do academic research and determine an area in their discipline in which the skills that we have studied have a critical impact. At this point, students immerse themselves into topics such as how visualization can keep injured athletes from losing their skill during their recovery period, how military nurses must keep the goal of healing their wounded colleagues constantly in sight, or how minority students must employ self-talk to battle against stereotyping in STEM disciplines.

Methods. The basic assessment strategy involves collecting quantitative survey data from students enrolled in the four treatment conditions noted above and supplementing this data with qualitative data from evaluation of reflective student papers. This is supplemented with ratings of research papers and information from interviews of students. The assessment strategy was implemented in 2013. As of 2015, we have surveyed nearly 500 students.

Using a variety of instruments, we collected quantitative survey data where students were sampled three times per quarter (in weeks 1, 5, and 10) to assess mental skills (emotion and attention control) psychological resilience (self-confidence in cognitive abilities and overall), academic motivation (both intrinsic and extrinsic), study habits (self-efficacy, surface-level vs. deep approach to studying), as well as a number of indicators of academic success. Due to its strong psychometric properties, the Test of Performance Strategies (TOPS 2) was used to measure psychological skills and strategies (Hardy, Roberts, Thomas, and Murphy, 2010). This instrument is utilized by athletes during practice and competition events. Self-efficacy items developed by Grant and Franklin (2007) were used to measure academic self-efficacy.

Qualitative data were collected and evaluated using multiple techniques. First, we randomly gathered 174 term papers from the four conditions. We then employed eight experienced composition teachers who had not participated in the redesigned course as raters and scored the papers on three criteria: complexity, clarity, and appropriateness of rhetorical choices. A norming session was conducted as per disciplinary standards (Huot, 1996). Inter-rater reliability on the sample papers in the norming session was 85%. Each paper was scored twice and inter-rater reliability across the scores was 75%, well above accepted standards of 50% for non-consequential assessment (Cherry and Meyer, 2009). In addition to criteria-based rating, we ran linguistic concordance software on the papers to determine if there were patterns in markers of complexity and sophistication of thought (Anthony, 2014). We then selected several lexical items that could signify a rhetorical move on the part of the writer. For example, writers' use of the words "achieve" and "goal" would seem to suggest at least some focus on topics connected to MST.

Our second form of qualitative assessment focused on the patterns and themes that appeared in the students' own writing. We compiled student descriptions of their learning from their reflective essays in the grit class. Reflective essays, common to each section of introductory English composition at our institution, are designed to cultivate the metacognitive habits of mind common both to MST and the Writing Program Administrator goals. We examined the manner in which students demonstrated the use of noncognitive skills.

Observations and Findings

This section contains observations based on preliminary quantitative and qualitative data. First, we examine means and standard deviations for MST constructs. The data are presented as tables. This is followed by a description of how student papers from each of the four conditions were evaluated by raters. Finally we describe some themes we noted in the students' own words. What we found suggests that students in the treatment conditions became somewhat grittier over time, that the papers from the treatment and control conditions were of similar quality, and that students developed language to describe their own non-cognitive skills.

Table 1. Means and Standard Deviations for Constructs												
Treatment	**Push-in**			**Add-on**			**Grit Integrated**			**Control**		
Time[b]	**T1**	**T2**	**T3**	**T1**	**T2**	**T3**	**T1**	**T2**	**T3**	**T1**	**T2**	**T3**
Construct	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M SD	M SD	M SD	M SD	M SD	M SD
Emotion Control	3.33 (0.73)	3.42 (0.75)	3.38 (0.67)	3.19 (0.82)	3.29 (0.80)	3.61 (0.69)	3.12 (0.74)	3.31 (0.74)	3.73 (0.82)	3.44 (0.56)	3.47 (0.60)	3.59 (0.68)
Attention Control	2.86 (0.71)	2.79 (0.65)	3.02 (0.68)	3.13 (0.64)	3.15 (0.61)	3.10 (0.58)	2.87 (0.54)	3.03 (0.68)	2.98 (0.64)	3.03 (0.56)	2.96 (0.63)	3.08 (0.64)
Self-Conf.[a] Cognitive	4.56 (1.39)	4.99 (1.28)	4.59 (1.45)	4.59 (1.28)	4.95 (1.20)	5.01 (1.14)	5.22 (1.28)	5.27 (1.13)	5.88 (1.33)	5.17 (1.16)	5.00 (1.08)	5.06 (1.18)
Self-Conf.[a] Resilience	5.37 (1.49)	5.52 (1.44)	5.17 (1.61)	5.19 (1.43)	5.49 (1.40)	5.53 (1.43)	5.82 (1.42)	5.72 (1.29)	6.43 (0.72)	6.16 (0.85)	5.96 (0.94)	5.71 (0.92)
Self-Conf.[a] Total	5.03 (1.30)	4.97 (1.23)	4.88 (1.52)	5.38 (0.94)	5.13 (0.94)	5.14 (1.08)	5.15 (0.97)	5.31 (0.82)	5.44 (1.05)	5.27 (0.91)	5.13 (0.92)	5.14 (0.93)
Self-Efficacy	7.30 (1.71)	7.50 (1.76)	7.86 (1.83)	8.10 (1.47)	8.10 (1.45)	8.20 (1.46)	8.43 (1.47)	8.31 (1.62)	8.02 (2.04)	8.25 (1.68)	8.42 (1.55)	7.65 (2.05)

[a]Self-Conf. stands for Self Confidence.

[b]T1=Week 1 testing; T2=Week 5 testing; T3=Week 10 testing.

Observations Based on Preliminary Quantitative Data

Means and standard deviations from our initial data collected during week 1 (T1), week 5 (T2), and week 10 (T3) are presented in three tables. To summarize:

- Table 1 contains means and standard deviations from the four conditions (Push-in, Add-on, Grit Integrated, and Control) for emotion control, attention control, self-confidence and self-efficacy. The sharper increases in emotion control were in the Add-on and Grit Integrated conditions; attention control rose for all but the Add-on group. The self-confidence total fell for all but the Grit Integrated group; self-efficacy rose for the Push-in and Add-on groups but fell for the Grit Integrated and Control groups.
- Table 2 focuses specifically on academic motivation (intrinsic and extrinsic). Mostly, intrinsic motivation increased for the treatment groups and was mixed for the control group; extrinsic motivation increased in the Grit Integrated condition, was mixed in the Add-on condition, and decreased in both the Push-in and Control groups.
- Table 3 centers on study skills (deep approach, surface-level approach, and hours spent studying). By week 10 (T3), students spent the most time studying for class in the Grit Integrated condition. All conditions increased their deeper study strategies, but Grit Integrated increased more.

Table 2. Means and Standard Deviations for Intrinsic and Extrinsic Motivation

	Push-in			Add-on			GRIT			Control		
Time	**T1**	**T2**	**T3**	**T1**	**T2**	**T3**	**T1**	**T2**	**T3**	**T1**	**T2**	**T3**
	M (SD)	M (SD)	M SD	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)
Intrinsic Motivation: Subscales												
To accomplish	4.26 (1.56)	4.75 (1.42)	4.47 (1.58)	4.44 (1.35)	4.75 (1.35)	4.88 (1.39)	5.17 (1.41)	5.01 (1.43)	5.85 (1.38)	5.15 (1.18)	4.92 (1.08)	4.86 (1.32)
To know	4.89 (1.41)	5.21 (1.30)	4.70 (1.50)	4.88 (1.32)	5.05 (1.09)	5.14 (1.08)	5.29 (1.31)	5.53 (0.99)	5.90 (1.32)	5.25 (1.35)	5.10 (1.44)	5.25 (1.27)
To stimulate	3.07 (1.51)	3.98 (1.85)	4.02 (1.79)	3.31 (1.38)	3.89 (1.49)	4.19 (1.41)	4.10 (1.58)	4.12 (1.50)	4.88 (1.55)	3.84 (1.45)	3.79 (1.57)	4.31 (1.43)
Extrinsic Motivation: Subscales												
External	6.00 (1.15)	5.83 (1.17)	5.52 (1.60)	5.85 (0.89)	5.77 (1.10)	5.79 (1.08)	5.94 (1.42)	5.46 (1.77)	6.23 (0.84)	6.22 (1.01)	6.17 (0.76)	6.08 (0.88)
Introjected	5.40 (1.45)	5.52 (1.44)	5.17 (1.61)	5.22 (1.45)	5.46 (1.40)	5.54 (1.43)	5.82 (1.42)	5.72 (1.29)	6.44 (0.72)	6.17 (0.84)	5.96 (0.94)	5.71 (0.92)
Identified	6.01 (1.01)	5.91 (1.06)	5.67 (1.20)	5.97 (0.75)	5.98 (0.89)	5.95 (1.05)	5.97 (1.33)	5.85 (1.27)	6.56 (0.64)	6.34 (0.91)	6.34 (0.68)	6.09 (0.93)

Table 3. Means and Standard Deviations for Study Skills

Treatment	Push-in			Add-on			Grit Integrated			Control		
Weeks	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3
Subscales	M SD	M SD	M SD	M SD	M SD	M SD	M SD	M SD	M SD	M SD	M SD	M SD
Deep approach	2.72 (0.59)	2.70 (0.67)	2.83 (0.65)	2.76 (0.62)	2.84 (0.65)	2.92 (0.73)	2.88 (0.56)	3.05 (0.71)	3.35 (0.63)	2.79 (0.61)	2.78 (0.60)	2.87 (0.75)
Surface-level approach	2.74 (0.59)	2.66 (0.54)	2.80 (0.73)	2.58 (0.63)	2.55 (0.55)	2.69 (0.71)	2.74 (0.76)	2.51 (0.46)	2.65 (0.54)	2.56 (0.54)	2.76 (0.63)	2.96 (0.70)
Hours studying	2.18 (1.47)	3.12 (1.58)	3.00 (1.56)	2.36 (1.59)	3.08 (1.50)	3.23 (1.56)	2.36 (1.42)	2.53 (1.18)	3.42 (1.44)	2.55 (1.77)	2.96 (1.55)	2.81 (1.82)

Examination of means and patterns in the tables suggests further areas for exploration.[4] For example, with respect to self-confidence resilience, means from week 1 (T1) to week 10 (T3) increase for the Add-on and Grit Integrated conditions but decrease for the Push-in and Control conditions. Interestingly, means for students in the Grit Integrated condition show a decrease in reported self-efficacy over the quarter but increases in intrinsic and extrinsic motivation. While means on attention control for students in the Grit Integrated condition drop from week 5 (T2) to week 10 (T3), they increase from their initial mark in week 1 (T1), as do marks for all but the Add-on condition.

Information in Table 2 on motivation reveals that the means for the Add-on (4 of 6 measures) and Grit Integrated (6 of 6 measures) conditions increase and that all three treatment conditions basically do better (increase more) than the Control condition. Furthermore, the preliminary patterns suggest that the Grit Integrated condition displays more robust effects across more variables of interest than the other two treatment conditions.

As noted, both self-confidence (Table 1) and academic motivation (Table 2) increase notably for Grit Integrated. Factors which may have contributed to this level of relative success in the Grit Integrated condition include a) a much larger dose of MST material (approximately five hours per week as opposed to 30 minutes or fewer for the other two treatment conditions), b) the "mixed-message" effect, which was likely minimized due to the entire curriculum being MST- and grit-based, and c) a potential trainer effect as material was delivered by an experienced full-time faculty member well-versed in MST. The faculty member was also an expert pedagogue and had a strong ability to connect with undergraduate university students. This contrasts with the other conditions that were taught primarily by graduate assistants with varying levels of expertise in MST and ability to connect with undergraduate university students.

Examination of means also suggests that Week 5 (T2) may be a critical point in the quarter for many students. As could be expected, means for students dip in most cases on self-confidence total from week 1 (T1) to week 5 (T2), at which time they are getting major assignments back. The Push-in condition decreases from what already is the lowest level and continues to drop. Perhaps their already tenuous self-confidence is challenged as they get more assignments back. In contrast, we observe that means for students' self-confidence increases in the Grit Integrated condition over time. Students in all other conditions see their self-confidence total drop below the level at which they started. A topic for future evaluation is whether the students in the Push-in and Add-on sections that were taught by teaching assistants were also responding to the challenges their instructors faced as they developed new content materials and potentially found their grading workloads increasing.

[4] Statistical analyses are being conducted for data from assessment of the course to determine the significance of the patterns; these results will be reported in academic journals (see Hammermeister, Briggs, Young, Conway, Flynn, and Pickering, forthcoming).

It is also interesting to note that while two conditions—Grit Integrated and Add-on—move upward on intrinsic motivation, Push-in rises mid-quarter (week 5, T2) and then decreases on 2 of the 3 subscales in week 10 (T3). In contrast, means for students in the Grit Integrated condition start higher on this measure and also see the steepest gain. The Add-on condition also shows an impressive increase. The MST curriculum is delivered in these two conditions by the faculty who both teach the other class content material and grade the students.

Unlike other measures, it is a positive sign when the surface-level approach to studying decreases. Means for the surface-level approach decrease at week 5 (T2) in all but the Control condition but increase again in week 10 (T3). The surface-level approach in the Grit Integrated condition, however, remains below its original level, which is not true of the other conditions. 3The means for the Control condition increase at both week 5 (T2) and week 10 (T3)

The measures of self-efficacy shown in Table 1 present a mixed set of observations. Students in both the Grit Integrated and Control conditions decline in self-efficacy to a level lower than that in week 1 (T1). The Grit Integrated condition students begin with the highest self-efficacy. However, while there is a decrease in self-efficacy in the Grit Integrated condition over time, the ultimate value of the Grit Integrated group's self-efficacy is second only to the students in the Add-on condition.

In reflection, the Push-in and Add-on conditions show subtle changes on the MST constructs of emotion control, attention control, and academic self-efficacy, but little change in motivation or study skills. However, this static state of motivation is in contrast to the control group in which measures of motivation and study skills sharply declined. While taken in aggregate, these findings suggest only moderate intervention success in the three treatment conditions. However, they help to lay the groundwork for more in-depth discussions of how MST can best be introduced into the classroom. For example, a number of factors likely contributed to the mixed results including a) the relatively small dose (approximately 30–45 minutes per week) of MST material presented, b) the difficulty many of the English department instructors had in reinforcing the MST material, and c) the lack of clarity inherent in the process of infusing one curriculum within another. Each of these possibilities is worthy of further study. The faculty involved in this project had their curiosity piqued by the somewhat mixed results reported in these tables.

The observed patterns in the data suggest that the Grit Integrated condition returns the most positive results overall. We have speculated on three reasons—consistency, dose, and instructor experience. The Grit Integrated condition was the only condition in which the MST was consistent with all of the other academic goals of the course. This consistency also led to a larger dose of the treatment. Finally, instructors in the Push-in, Add-on, and Control conditions were less experienced than the professor in the Grit Integrated condition. These less experienced and more materially vulnerable instructors may also have been responding to some English department resistance to teaching something other than "traditional" composition in these classes. Although this objection was based on an outdated understanding of what composition courses entail, we embarked on the next element of the study to determine whether or not this

resistance had merit. We therefore examined student writing to see if it differed substantially in quality from group to group.

Observation Based on Qualitative Data

Student papers (n=174) were evaluated on three elements: "Clarity," "Complexity," and "Appropriateness of Rhetorical Choice." These criteria were derived from the newly articulated goals for university-wide general education. In our evaluation, we operationally defined a "clear" paper as one in which "the reader is drawn into a focus for the writing, the reader does not become confused, and the reader is not distracted by tangents or errors." We operationally defined a "complex" paper as one in which "the reader finds that the ideas are worthy of college-level consideration, that the examination of the elements of these ideas is nuanced, that the intellectual conversation out of which these ideas arise is acknowledged." We operationally defined a paper in which appropriate rhetorical choices were evident as one in which the "tone, structure, and visual display are appropriate for the status and position of the reader." The scale for rating spanned five points, with "5" indicating that the paper was "outstanding." A "4" put the paper in a category of "strong," a "3" meant that the reader would describe it as "adequate," a score of "2" indicated that the reader found the paper to be indicative of "emergent" academic literacy, while a "1" was regarded by readers as a "rudimentary" attempt.

Scores on the student papers were within 10% of each other across the four conditions for the quality of "Clarity." The control condition had the highest scores on both "Complexity" and "Choice," with larger gaps between the conditions. For both of these criteria the grit condition was within .20 of a point of the control condition (see Table 4).

Table 4. Scores on Student Research Papers in Four Conditions

	Four Conditions			
	Push-in	**Add-on**	**Grit Integrated**	**Control**
Subscales	M (SD)	M (SD)	M (SD)	M (SD)
Clarity	2.59 (0.83)	2.50 (0.93)	2.60 (0.86)	2.78 (0.69)
Complexity	2.43 (0.80)	2.41 (0.75)	2.78 (0.76)	2.98 (0.68)
Choice	2.20 (0.76)	2.18 (0.85)	2.55 (0.90)	2.66 (0.77

While papers from the control condition were rated markedly higher than those from the Push-in and Add-on infused condition, there was little difference between scores of the Control and Grit Integrated conditions. The results did not document what we had hoped to see—that instruction in noncognitive skills had a clear positive impact on student writing. However, grades between classes are often distributed in similar patterns, even without the variable of the MST curriculum. It does seem noteworthy, however, that while the control, sport-psych, and English condition were all taught by teaching assistants with the same level of experience, the greatest difference in the ratings was between the Control and Add-on conditions. This does suggest the need for caution in using classes taught by teaching assistants for this purpose. Other elements besides the level of experience may have impacted the scores, as some teaching assistants' major program advisors (i.e., Creative Writing, TESOL, Rhetoric and Technical Communication) were vocally opposed to their students' implementation of the MST curriculum.

Students from the Grit Integrated condition reflected explicitly on the role that the MST curriculum played in their lives. They reported that the idea of "mindset" was new and enlightening, that they had developed healthy academic practices as a result of their work in class, and that they were able to learn from their failures.

Mindset. The following students offer examples of how they integrated the concept of "mindset" into their views of themselves as learners. One student said:

> The stories in the book [Paul Tough's *How Children Succeed*] I could personally relate to made me confident. I learned that if I developed these noncognitive skills I was going to have a successful outcome. I'm glad that my professor chose this book because being a freshman in college it changed my mentality that led to a more positive academic performance.

Another student, one who spent most of her high school years living in a non-English-speaking country, attributed her "before" and "after" attitudes directly to Dweck's research:

> I mentally convinced myself that I wasn't good at writing college-level papers, without realizing that I was actually thinking with a fixed mindset. After being taught over and over again about the difference between the two, I was convinced that having a fixed mindset was a setback for myself. . . . Without being taught the concept of the two types of mindsets, I wouldn't have realized that I had a fixed mindset, and would have continued to restrain myself. I will always remember to learn to at least push myself harder when struggling to achieve something, before giving up.

Another student recognized his mindset in the class:

> When first learning about a fixed mindset, I realized that I've had one about some things for a while, I feel and see a change now that I discovered it.

Application of concepts. Students identified their use of a number of specific strategies in the class. This first-generation student found his voice in the "achievement autobiography" paper in the grit class in which he applied the ideas of goal-setting and self-talk to a narrative about winning the final match at the state championship. In that paper, he described a single moment when his opponent was pushing on the site of an old injury. In his achievement autobiography he recalled how he decided to achieve his goal to win the match by talking himself through the pain. In his reflection he says:

> When I started at [this school], I thought I was going to have the hardest time adjusting and not get the best grades possible especially in English. It turned out I was wrong in most of it, what I learn from grit, growth mind set I learned that can do just like everyone else. I quickly I found out that if I kept pushing myself like I did in wrestling then I can be just as successful as I was in wrestling.

He generalized the recollections of his grit in the wrestling match to apply them to the rest of his work during the quarter.

Another student describes how the work on emotion control helped her break old habits:

> In high school I had a bad habit of self-destructing when I was angry or discouraged, and do things like would blow off my school work and not take quizzes or my education seriously. When I failed the test from reverting back to my old habits . . . [a class process] helped me recognize my own fault before it was too late and become the gritty student that I was before. Now anything I attempt I perform at the best of my ability even if there is no tangible or immediate reward.

This student indicated pleasure and surprise when she came up with her own process goals:

> When I found myself encouraging myself to finish my work before I went to the gym or hanging out with family or friends I was shocked but I was also proud of myself.

While that student applied the idea of delayed gratification, another found that self-talk resonated:

> Professor X was a huge part in teaching our class how important it is use self-talk every day to help us get through setbacks that we might face along the way.

Learning from failure. At least in some cases, the class seemed to help students embrace failure as a learning opportunity rather than to see it as a reason to quit. This man states:

> I realized what has made me the learner I am today: failure. Failure made me a better learner because it changed the way I wrote papers. . . . I took things like this into consideration because I failed on doing it the first time.

Not everyone passed the course. However, two of the four students who did not pass wrote to thank the professor, take responsibility for the failure, and even apologize. The heartfelt nature of the apology comes across in this unsolicited email:

> i am truly sorry i failed you as a student you were a great professor and i learn a lot from your class i enjoyed going to your class again i am truly sorry

Finally, another failing student planned to use his failure as motivation. This is what he said in an unsolicited email:

> I do not know if I'm coming back next quarter but if i do, you bet I will definitely stay on top of my work, if anything, the grades I got this quarter will act as my motivation for spring quarter. Once again, thanks for everything, despite the fact that I wasn't much of a good student, you are one of the most inspiring teachers I've come across.

Although we are hopeful about this approach, we don't want to imply that the process was without challenges for faculty or students. In fact, students in the "grit" condition sometimes complained about the "dose" of grit they got. As one student said:

> Honestly I felt like we talked about grit since the beginning of school and I'm not saying it's a bad thing but I was getting tired of it. I then realized why you were talking about grit so much because you wanted to teach us grit. You wanted us in class to learn the traits of grit, and how we can become grittier. I remember in the book *How Children Succeed*, chapter 3, Tough argues that teachers must convince their students that everything about them, from their IQ to their personality, is flexible and can be altered or transformed when properly trained. I feel like you could've trained me better if I came to class more often.

This student's statement demonstrates self-awareness, his ability to apply his reading, his acceptance that what is boring is sometimes also important, and that he believes it is the responsibility of faculty to "convince" students that they can grow, learn, and develop. Our research suggests that the MST curriculum can do some of that convincing.

Lessons Learned and Conclusions

Observations from the preliminary data show that the infusion of MST material into an English composition class is likely to be moderately effective across several outcome dimensions as long as some key considerations are met. First, the "dose" of MST appears to require a certain level of critical mass to be effective. We are not able to determine precisely where that threshold lies. However, it appears to lie somewhere beyond the 30 minutes per week allocated to the "infusion" groups and may require up to five hours per week or more of immersion to produce a measurable effect. The Grit Integrated condition provides the largest dose of MST-related

material and not surprisingly also shows the most consistent effects. While this is a clear indicator of the importance of dose, this finding also strongly suggests the viability of a resilience-based themed approach to English composition.

The second consideration that should be highlighted is the importance of the instructor as it is very likely we experienced a trainer effect in the Grit Integrated condition. While the importance of outstanding teachers is not news to the higher-education community, this finding shows the importance of having skilled staff for the delivery of MST-based intervention material as the concepts simply cannot be "absorbed" by the sample population otherwise. The anecdotal evidence presented above is a good illustration of the connection this instructor had with her classes and this connection no doubt had some influence on our findings.

The third consideration of note is the low-income status of the study population. Fortunately, we did have data on low/high-income students, and while we did not find major differences on our quantitative variables of interest between low- and high-income students, we did see some subtle effects over time with the lower income group. The intervention presented in this chapter is based off prior experimental studies that are aimed at first-generation college students (e.g., Hammermeister et al., 2012), which are generally a lower-income group than their generational peers. Thus, it's possible our material is inadvertently "targeted" more toward this group than other subpopulations in our sample.

Previous research has found that first-year college students often perceive themselves as more successful than their faculty see them (Sanoff, 2006). This includes student self-perceptions of writing ability. Such precollege perceptions may explain why some of the measures we gauged drop fairly steeply at week 5 (mid-quarter) when it is likely that students' second graded assignment has been returned. At this point in time, students may recognize that the "A in high school English" to which they frequently refer will not be repeated in college without significantly more effort. While the scores generally move back up in week 10, measures often do not return to the pre-feedback level. Interview or focus group research could help confirm this suspicion or suggest a different explanation for this result.

Taken at face value, our findings may appear to be on the modest side—particularly with the infused Push-in and Add-on conditions. While we did see some notable changes over time on a number of our MST constructs and resilience-related variables of interest (especially in the grit condition), we failed to make major gains on a number of writing-specific outcomes. Nevertheless, we are very early in the process. Given the critical importance of college graduation for the students themselves, employers, and the economy, as well as the prevalence and cost in time and energy of other programs designed to enhance persistence, we believe the outcomes presented here are noteworthy. Summer bridge programs, supplemental instruction programs, first-year programs, mentoring programs, developmental education programs, and culturally specific advising and retention programs are often separate from or an add-on to the general education and major requirements for a degree. College composition, however, is one of the most universally required, transferable gateway courses at any institution. The infusion of MST into the composition course is low-cost (.75% of one faculty member for two years), and

whether or not individual students became more resilient, those who pass the course receive credit toward graduation. Unlike other programs mentioned above, implementation of the grit component into a required class does not cost the students additional money or time. The economy of this effort suggests that future experimentation with and research into this type of approach is warranted.

Among the elements of this project that we hope faculty and administrators across the country and beyond will note is the collaboration of faculty from disciplines not necessarily seen as related. While the two rhetoric/compositionists and the linguist could be expected to affiliate, connections to sports psychology are less typical. What drew the group together was a shared commitment to undergraduate learning and the belief that the noncognitive skills were essential to academic success. They can and need to be taught. In other words, MST and "grit" are not skills that faculty can take for granted. Nor should the lack of these skills be grounds for rejecting students as unwilling or unable to learn.

Final Thoughts

Most traditional university success models are based solely on efforts to teach study skills and "college knowledge" in order to acculturate students to the university environment, neglecting the need to teach the "whole student" how to persevere by helping them develop noncognitive or "mental skills" (i.e., grit). The MST approach described in this chapter, and represented in Figure 2, offers a holistic model for promoting student success. Importantly, it can be adapted to a range of institutional and disciplinary contexts. While our efforts to date have not conclusively proven the viability of our model, we believe the pursuit of teaching students to be more gritty and resilient is a worthy one. The research (as part of our assessment strategy) will follow as we refine our program.

In summary, the incorporation of MST into student success efforts permits us as faculty to integrate students more effectively into the learning experience through the development of "grit." Students become aware of and gain more control over their own learning processes through the development of a range of "habits of mind" such as reflection, inquiry, goal-setting, and metacognition. Further, and most importantly, the mental skills training model presented in this chapter teaches students tangible ways to become aware of, and improve, their own resilience and ability to persist in the face of obstacles and challenges, throughout college and life. As one of our students said, grit is something that she'll need to achieve her goals.

Last weekend, Janeil and his professor stood shivering together at the football game. Janeil had been retained to his sophomore year, but he was bemoaning the team's spate of fumbles and turnovers. Janeil shook his head and proclaimed, "They gotta get some grit!" Janeil and his classmates show us that resilience can be taught, and that the composition classroom is an efficient and effective place for this material.

We plan to heed Duckworth's admonishment that we need to be gritty about getting our students grittier (2013) with follow-up research. We will examine the retention data for these

students to learn if they are retained at a rate higher than their peers. We also will continue to survey and collect reflective writing from students as our curricular configurations evolve. Most of all, we hope that we have started a conversation with our readers, and that they will pick up elements of this study to test, explore, and examine.

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How Students' Dreams Can Help Them Persevere

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More than two decades ago, Vincent Tinto (1994) noted that "rates of departure [of students from colleges and universities] are necessarily a reflection of the particular attributes and circumstances of an institution" (p. 22). He called on schools to "find new ways of actively involving students, as well as faculty, in their intellectual lives" (p. 212). Unfortunately, even with Tinto's warning that action should be taken, national retention of first-generation US college students has remained alarmingly low for all but those at the most financially empowered institutions (ACT Educational Services, 2012). In response, institutions in all sectors of higher education are exploring methods for engaging students in their own *success*. George D. Kuh (2013) proposes that a school consider whether it "has fulfilled its purposed and brand promise." While the efforts of institutions to mine data for potential avenues to improving student success rates are increasingly visible in the literature, the efforts of professors to seek classroom-based activities that address program retention goals are less visible. This is unfortunate in that our anecdotal evidence suggests a single classroom assignment led by a professor can have unexpectedly positive results. The professor, through a carefully designed assignment, can enable a student to articulate his or her dreams in ways that are life-changing.

The purpose of this discussion is to highlight how faculty can use a well-designed classroom initiative to successfully engage students in the educational process. We describe the "Research in Discipline" assignment, a strategic in-class activity that is consistent with the "multiple strategies" approach to retention of students (Brawer, 1996), using a variety of engagement opportunities or activities that collectively contribute to successful student outcomes (Chaves, 2003). Typically implemented outside the classroom, this approach includes programs that support nontraditional students, student-faculty interaction, and learning communities, all of which attempt to counteract dropouts by providing comprehensive learning assistance to at-risk students (Brawer, 1996; Chaves, 2003). We believe that the "multiple strategies" approach can also be used successfully inside the traditional classroom. Designed for inclusion in a first-semester composition course, this research assignment encourages student success through

enhancing an understanding of his or her life visions while simultaneously strengthening writing and research skills.

Background: Conceiving the "Research in Discipline" Assignment

The "Research in Discipline" assignment was first conceived by Jason Vinson more than a decade ago as a means to connect the personal, academic, and professional lives of students. Vinson felt that in many conventional research paper assignments students were being asked to enter into a conversation that was already taking place between experts. As a result, they felt little personal connection to what they read and wrote, felt they had little to contribute, and therefore had little incentive to think about how their writing might be relevant to them beyond the grade in class. This assignment, and the title Vinson coined, "Research in Discipline", was his attempt to shift that pattern to one more likely to engage the student in the activity.

Through the years, we have built on Vinson's concept and incorporated it into the design of our composition courses. For example, Christensen has embraced the concept to design and adapt his entire semester toward paper assignments that help students think about their lives holistically and to grasp the value of creating goals and plans for achieving those ambitions, with the "Research in Discipline" paper being the culmination of the semester's assignments. In contrast, Dawson uses a series of shorter, cited, and revised self-reflection papers to lead up to the "Research in Discipline" assignment by mid-semester. From that foundation, the papers written for the remainder of the semester look outward toward the educational, business, and social environments awaiting the first-year students. Student feedback provides de facto evidence that these assignments build a platform for positive student outcomes. Some assignments have student feedback built into reflections students include in the conclusions to their papers.

The "Research in Discipline" Framework: Identifying the Assignment Components

The following discussion takes the reader through a framework that identifies the components of the "Research in Discipline" assignment while noting the inherent and potentially positive impacts upon student attitude and preparedness. The process builds conceptually on Sullivan's belief that professors should consider the importance of "intrinsic motivation" in helping students overcome an aversion to writing (Sullivan, 2011, p. 120).

The student learning outcomes for the "Research in Discipline" assignment are the same as for other composition research assignments: "demonstrating competence in organization using sufficient and ethically-cited evidence and explanation in Edited American English according to agreed-upon format rules." However, the intensely individual focus of this paper enables faculty to help make the topic accessible to students for creating a gateway to their future and for encouraging student degree completion. As Paul and Elder (2011) say about critical writing: its "universal purpose" is "to say something worth saying about something worth saying something about" (p. 7). For many first-semester students, there exists nothing more worth "saying

something about" than themselves. The "Research in Discipline" assignment approaches this problem by building on the thesis that a successful person has a goal and a plan to reach that goal.

The plan developed through the "Research in Discipline" assignment includes milestones, but it also attempts to envision obstacles. It can be designed to take up the entire semester or it can require no more than any other short introductory research project that might seek limited targeted research and sources. In order to complete the assignment, we require that students create a personal Mission Statement to establish specific life goals. Students then research their paths from undergraduate school (and graduate or professional, if applicable) to career positions while considering the potential lessons of role models in their fields. Upon completion of the assignment, first-semester students should have made the ephemeral concrete and come to regard their responsibilities in ways that coalesce with their life goals and happiness. We build the platform for this success by following the simple, but carefully designed, steps described below and shown in Figure 1.

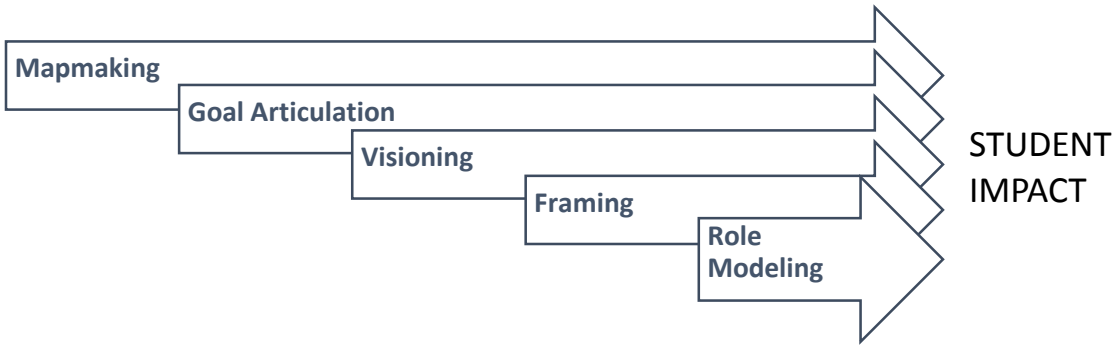

Figure 1. Framework for developing the "Research in Discipline" assignment

Mapmaking

As faculty, we are aware of the importance that process plays in introducing a complex assignment. Process sets the stage for future success, with respect to both student motivation and assignment completion. The process itself can be enlightening for many students who have not yet envisioned a future beyond attending college. This is especially true for first-generation students who may have limited family guidance on how to succeed in higher education and in how the career marketplace works for graduates. As a result, the role of faculty in choosing an approach that interests the student in the "Research in Discipline" assignment is critical, especially if the assignment has as its goal to enhance student engagement and long-term student success. One introductory approach that we recommend is simple mapmaking. Students in the class draw a detailed map of a daily trip, whether from the dorms to the classroom, or from home to the campus, or to the store, or to the airport; the map includes as many of the twists and turns as they can recall making during the journey. Whatever the student drawings look like, they represent visual accounts of the twists, turns, and convolutions within a simple trip. Students are

then asked to discuss how revealing mapmaking can be, to develop the concept that a map can be a drawing of a past journey but is even more useful as a plan for a future journey. While working through the implications of mapping, faculty can help students perceive the logic behind creating their own articulated vision and plan for a fifteen-year process toward personal and career achievement.

Goal Articulation

The students' efforts to articulate their goals are facilitated by our introducing the concept of "mental models" during the goal-setting phase. Gerald Nosich (2012) says that reasoning out these ingrained "mental models" evokes some of the revelatory energy that fuels students throughout a project. Similarly, Robert J. Marzano (2011) describes working with "thought experiments" as beginning "by guiding students through the creation of mental images" (p. 82). (For more on the benefits of personal writing, see Sullivan, 2003.)

Mental images help students enunciate goals that can lead to the creation of a Personal Mission Statement. Stephen Covey (1990), the business consultant, says, "To begin with the end in mind means to start with a clear understanding of your destination. It means to know where you're going so that you better understand where you are now and so that the steps you take are always in the right direction" (p. 98). We strive to keep students stepping in the right direction. However, clarity of a life vision for students just out of high school is not always easy to attain. With a little cooperative work between professor, student, and the rest of the class, focused and compelling mental images of goals can be composed.

Visioning

To help process the concepts articulated in a Mission Statement, we ask the students to free write about their dreams and hopes for family, careers, cars, and houses. These written images, often powerful and sometimes naïve aspirations, coalesce on paper to become the basis for a Mission Statement. During focused class discussion, we support students in realizing that their dreams center around themselves and what they want. They accept that, as young adults, their life plans should be self-directed because the voice of a person's inner life represents not a selfish voice, but a self-interested voice (for more on the benefits of self-interest, see Larson, 2009). Modulated by an appreciation for what makes human lives fulfilling, the self-interested voice remains a person's greatest advisor. This self-interest resonates into every aspect of student life and beyond.

Viktor Frankl (1992) connects the meaning of existence to self-interest when he says, "One should not search for an abstract meaning of life. Everyone has his own specific vocation or mission in life to carry out" (p. 113). He further speaks to the importance of the inner voice when he says that a person "can only answer to life by *answering for* his own life" (p. 113). Modern first-year students are inundated with advice from friends, family, and the media, so it is

essential for them to be aware of how these outside voices can sometimes negatively influence their own self-interest. We encourage them to entertain those personal, self-interested goals before the class proceeds to the next phase in the Personal Mission Statement, examining the many aspects and implications of a rewarding life.

Overall, first-year students develop specific physical goals with ease. In addition, through prompts from the professor and mini-workshops, they can describe with some specificity their visions of a future love life, perhaps a family, what facets of their career will excite them intellectually, or what hobbies they might enjoy developing. We find it useful for the class to consider the question, "What would you do if you had all the time and money you wanted?" Students will want to travel and see and do many things. But once they have exhausted those possibilities, the subject often turns to helping people. As Frankl says, "The more one forgets himself—by giving himself to a cause to serve or another person to love—the more human he is and the more he actualizes himself" (1992, p. 115). College students support the simple truth that "doing good" makes life richer in a manner that cannot be quantified.

Framing the Life Plan

Thinking now more holistically, we ask students to write a serviceable Mission Statement. This statement can begin with the phrase "When I am 35 years old, I want to be" and then continue from there. Students' statements appear to be concise but strive to be comprehensive. Through this process, students give themselves a life vision in which all aspects of college may be seen as stepping stones along a path they can follow with as much seriousness as first-year students can muster. Given that students are about to research the next 10–15 years of their lives, they find an outline useful as a guide for this activity. The outline is a plan to build the plan (see sample outline in Exhibit 1).

Exhibit 1: "Research in Discipline" Paper Outline

Title page
Intro: Hook
Thesis (success requires a goal and a plan)
Personal Mission Statement
Body (Chronological):
1st Section: Undergraduate Studies
Requirements (including Senior Project/Summary of Check Sheet)
Networking (Clubs, Organizations, Internships)
Financing (Cost and payment/ scholarships, grants, loans)
2nd Section: Graduate Studies
Requirements (including GPA for acceptance into program)
Networking (Clubs, Organizations, Internships)
Financing (Cost and payment/ scholarships, grants, loans)
3rd Section: Entry-Level Job
Requirements (Check want ads)
Salary and Benefits
Responsibilities
Opportunities for Advancement
4th Section: Career Goal Level
Requirements (Check want ads)
Salary and Benefits
Responsibilities
Opportunities for Retirement
Conclusion
What Have You Learned?
How Can You Adjust Your Present Plans for Higher Chance of Success?
Works Cited Page

Between the introduction and conclusion, students sketch their oncoming realities chronologically. They ask, "How do I get from this composition class to my highest career expectation?" Students free write and then discuss the requirements of their degrees, the support and opportunities available on and off campus, the next steps in their education, positions they may seek upon graduation, ultimate career goals, and contemporary role models. Undergraduate, graduate, entry level, career level, and role model concerns comprise the five areas that make up the outline.

We have found that a good place to begin researching this step is with the undergraduate degree-program-check worksheet, which many first-year students have not yet appreciated. Because online registration often bypasses in-person advisement, the process of obtaining a degree check sheet from their program department offers many students the opportunity to meet their major advisors for the first time. With this document and an advisor to help, students become informed about their required credits and the focus of their upper-level courses. They

can then research their cost per credit hour, total tuition cost, as well as the cost of books, supplies, and dorm housing if appropriate. Food, entertainment, travel, phone, and clothes expenses might add to the total cost, as well. To pay these bills, students may work for cash or they might research grants and scholarships. Many do not understand that these sources of free money generally require only some front-loaded effort such as completing the form, requesting recommendations, and writing an essay. Many have never considered that if they spend even five hours on this task and are awarded the scholarship, they potentially would be working at a rate of $2,000 per hour.

Research into service clubs, organizations, internships, and volunteer work can also pay dividends. Students have heard many disjointed facts concerning these aspects of college life, but it is often not until they put them into the context of their career opportunities that they fully understand how clubs and organizations become networking connections for a lifetime, offering scholarship and grant portals as well as internship and community service openings. Additionally, there exist many often-unexplored organizations off campus at state, national, and international levels, including the volunteer sector.

After these discussions in class, students are prepared to consider courses required for graduation during their senior year. For most majors, this is their capstone class. The sooner first-year students begin to internalize the responsibilities required of college seniors, the sooner they may adopt beneficial study habits and structured time management. Student feedback indicates that for many students who receive information about their capstone projects, the experience is motivating and energizing. They gain confidence as undergraduates with majors and advisors in those majors and departments supporting their struggles toward ascendancy. Additionally, many first-year students who comprehend what will be expected of them in their senior year state openly that they are not yet capable of doing that capstone project. Thus, they begin to connect the dots between the content in their first-year courses to the demands of their senior courses.

It is also productive to encourage students to “think beyond” undergraduate school degrees and consider options for advanced degrees. If they aspire to enter a graduate or professional school, or even if the option is merely open, we encourage students to address that section of the outline. Most of the components of an undergraduate education apply to graduate and professional school except that costs skyrocket, grants dwindle, free time compresses, and competition rises. Exploring the entrance requirements of post-baccalaureate schools is essential, especially where it reveals the minimum required GPA. This is a vital statistic for first-semester student engagement and retention. Students profit from the reminder that what they do now impacts tomorrow.

We require that career aspirations be researched by all students. Through this research, tomorrow appears as an articulated and considered reality, especially when students investigate entry-level positions using want ads, classifieds, job boards, company web sites, and online career opportunity postings, including the US Bureau of Labor Statistics database (BLS.gov). Further, researching the career-level section produces what students have been dreaming about all along. Career-level position data produce the greatest motivational visions, with salaries near

their peaks, benefits reassuring, and job responsibilities that begin to read like the words of the students' Mission Statements. This is the window into career dream worlds where students will reap the rewards of hard work and due diligence, like so many of the people they have heard about throughout their lives. If time permits, we guide the students in developing a personal résumé that reflects the language of their fields.

Role Modeling

Near the end of the assignment, students are introduced to the concept of role modeling. The importance of having role models in the development of goals and aspirations is well documented in the literature (Zirkel, 2002). We ask students to seek out role models, whose experiences add explicit rather than simply inspirational value to their research papers. Students examine the details of the role model's struggle and decision-making toward his or her achievements. Students uncover how role models paid for school or what organizations they joined for networking opportunities. Within this portion of the research, students can learn from the role models' experiences, challenges and triumphs. The students understand that the best use of a role model is to discover effective paths to follow or unproductive paths to avoid in the interest of attaining success in the shortest time at the least cost. In fact, the whole research project aims, in the vocabulary of the business world, to maximize students' return on their financial, intellectual, emotional, and temporal investments.

Student Impact

As their assignment nears its completion, we ask our students to sum up what they have learned. The feedback they provide is important in assessing the effectiveness of the activity. Especially important to retention and perseverance is students' familiarization with all the various support mechanisms and personnel across the campus and community. Often they identify a few very specific and personal epiphanies. For example, after interviewing her mentor, one student told a professor during office hours that she felt that she could re-do the paper with a different emphasis because she learned that she can get funding for graduate school in psychology. Another student, a biology major, decided he wanted to become a medical doctor instead of a nurse because he learned while writing the paper and during class discussions that his personality is not suitable for nursing as he had come to recognize that he did not want to take orders from a doctor. Information on funding clearly transformed one student's decisions about graduate school, while another student transformed his visions based on a new understanding of the dynamics of his career choices. Both are life-changing shifts in addressing their dream futures. Even more telling is the example of one first-semester student, who, at the conclusion of a 2011 research project, wrote that "constructing this research paper started off as just a grade. However, it has become my physical 'life guide.' I can adjust my present plans to ensure higher success." This student internalized the behavioral and attitudinal changes that are a core dividend of the

assignment. Through writing, the student's critical thinking skills led her to a transformational experience. Undergraduate degree programs can build on her epiphany.

Through the "Research in Discipline" paper, students establish a life plan written in their own words. Sometimes they recognize, as the above-referenced students did, that the paper "started off as just a grade" but then became a "physical life guide." They experience revelations about how much money they will earn versus what they expect to spend, or how much debt they will be carrying, or even whether they are in the wrong major for what they sincerely want to do in life. This is especially important in that each semester some students come forward to reveal how little awareness they previously had of the overall cost of their education. Many of these students make the financial aid office their second home. Often, other students speak about how they "finally understand" the importance of their GPA in relation to continuing financial aid or being accepted in bridge programs to other institutions, or even to having the opportunity to be considered for graduate school.

Having submitted their papers and while they are awaiting feedback on revisions, students prepare oral presentations of the research paper. Frequently, it is during the oral presentation, while explaining their visions and plans to peers, that students come to own those dreams. Students engage with each speaker and become encouraged to believe in themselves and their learning community. Reiterating the thesis about the advantage of a goal and a plan to personal success is also essential to students' internalizing the message.

These insights are invaluable, especially because they come to the students in the process of composing research. As Paul and Elder (2011) state, "When we write to become good writers, we teach ourselves as we explain things to others" (p. 8). Students' ambitions mature and their resolves strengthen through primary research using core elements of critical thinking. Insofar as student retention and persistence involves motivation, dreams, vision, and goal-setting, as well as having a plan for future success, an understanding of institutional expectations and support, assessment, critical thinking skills, and being able to internalize personal and financial responsibility, the "Research in Discipline" assignment may go a long way toward keeping students on track, in school, inspired, and successful.

Lessons Learned and Recommendations

Like many professors, we find that motivating students in composition classes is an ongoing challenge. We would propose that the challenge can be met by tying solutions to activities that improve student retention. Having students write out their goals and research their future helps incentivize first-year students to embrace their goals and become college graduates. In fact, the most encouraging lesson learned through implementing the "Research in Discipline" assignment is that students with personal goals and a concept of the path forward can be among the most academically tenacious. Building assessment into the design of the assignment or course can be useful as a future research stream. The following lessons and insights have come from our experience with integrating the assignment into our classes:

Lesson 1: When professors design innovative course activities, the approach must be consistent with best practices in education. Evidence suggests that the "Research in Discipline" in-class assignment is both intuitive to professors and consistent with recommended best practices in the classic literature. At a fundamental level, the "Research in Discipline" assignment is consistent with Chickering and Gamson's seven principles for good practice in undergraduate education (1987). The principles encourage "contacts between students and faculty," development of "reciprocity and cooperation among students," as well as the use of "active learning techniques," and "prompt feedback" (p. 2). Further, the principles emphasize "time on task," communication of "high expectations," and respect for "diverse talents and ways of learning" (p. 2).

The assignment is also consistent with the six types of student orientation program strategies identified by Coll and VonSeggern (1991) as essential to academic socialization. They note that "effective precollege orientation programs provide (1) descriptions of college program offerings; (2) the college's expectations for students; (3) information about assistance and services for examining interests, values, and abilities; (4) encouragement to establish working relationships with faculty; (5) information about services that help with adjustment to college; and (6) financial aid information." We believe that the "Research in Discipline" assignment is equally effective in meeting criteria for effective orientation of students to college life and that its use as an in-class assignment in traditional classes should be encouraged.

We believe it is appropriate to suggest that professors are generally open to examining assignments within the best practices paradigm. Educators "share in a common obligation to prepare their graduates as fully as possible for the real-world demands of work, citizenship, and life in a complex and fast-changing society" (College learning for the new global century, 2007). They want students to break away from the simplistic, singular concept that money and power are the ultimate rewards of higher education. The "Research in Discipline" assignment enables professors to address this concern through active learning, time on task, and cooperative and reciprocal discussions while bringing in content that is relevant to the individual disciplines. For example, an introduction to and discussion of Abraham Maslow's Hierarchy of Needs (Maslow, Frager, & Fadiman, 1987) enables students to grasp how the pursuit of money is tied generally only to Maslow's lowest need levels and that something more than money is required to attain self-respect, esteem, self-actualization, and enlightenment—qualities at the core of a new global community. Students can be guided to see their futures and their lives in society as enriching on many different and equally vital levels.

Lesson 2: A single in-class assignment built around effective faculty-student dialogue has the potential to impact student success throughout and beyond their college career. As noted, evidence suggests that the "Research in Discipline" assignment is impacting students both in the short and long terms. We believe that the underlying driver for this success is faculty-student dialogue. The assignment provides a platform on which professors can engage students by enabling them to articulate their dreams. In addition, professors tap student growth potential through respecting where the students are. Students never feel left out of a discussion of their

own lives. Further, professors are free to choose appropriate course content delivery systems to encourage discussions by showing respect for a student's "diverse talents and ways of learning" (Chickering & Gamson, 1987) and by communicating with the students through use of technologies students use in their daily lives like social media and the internet, or the introduction of often under-utilized options such as the library and on-campus career fairs or graduate school seminars. These faculty-student interactions help students understand and articulate their short- and long-term aspirations. Professors can simultaneously "communicate high expectations" (Chickering & Gamson, 1987) from the basics of skill development in composition, to the complexities of an understanding of intellectual property and the need for research citations. The professor engages the students by encouraging student questions, especially those about their own disciplines and how to be successful, but not necessarily answering them. Answers should come from advisors in the students' majors or authorities in administration or reputable secondary research sources. Most importantly, our feedback from students indicates that these techniques work and motivate students to pursue their dreams.

Lesson 3: Successful course innovations such as the "Research in Discipline" assignment are not yet sufficiently validated. Professors can enable students to articulate their dreams in a way that impacts their perspectives on success and path to degree completion. Unfortunately, it is difficult to validate this observation. As we noted when we began this discussion, the efforts of professors to seek classroom-based activities that address program retention goals are not as visible as are institutional-level initiatives to improve retention. We noted that this is unfortunate in that anecdotal evidence suggests a single classroom assignment led by a professor can have unexpectedly positive results. The lack of visibility could be at least partially related to the need for a more definitive approach to assessing and publicizing the results of classroom efforts. This may in some cases be aggravated by the lack of academic support for the required classroom research needed to validate results. If this is the case, our ongoing challenge is to build effective and approved assessment of innovative assignments on student success, to include long-term student engagement, retention, and degree completion. The good news is that short-term assessment can be built into regular classroom activities. The more difficult problem is to determine how to evaluate the impact of innovative classroom assignments on student success and retention over the long term. Fortunately, the scholarly literature on enhancing teaching through constructive alignment suggests that the best evidence of successful classroom practices can come from students using a number of familiar and widely used strategies—from writing diary entries and creating portfolios to taking part in critical classroom moments (Biggs, 1996). These data would need to be combined with some measure of student success (for example, rates of degree completion or graduate school acceptance, and the number of job offers). Ideally, the decision on the appropriate strategy for accomplishing assessment goals that validate the outcomes or impacts should occur during the design of the class.

Summary

Professors have many options when designing their version of the "Research in Discipline" paper. In-class or out-of-class micro writing, even a few low-stakes papers, offer a less stressful way for students to begin. Smaller assignments can lead into more complex papers with group projects and oral presentations and research-heavy writing receiving higher-stakes grades. Revision in writing is always essential and so prompt feedback on student writing is critical. Within the "Research in Discipline" framework, feedback might be handled by peers, online discussion boards, in-office meetings, or even directed self-assessments during class time. The creativity a professor can bring to the task is unlimited, as are the ever-growing sources of information available to students digitally.

Teaching students how to write effectively is a messy endeavor, which, to a great extent, involves teaching students how to think effectively. First-year college students have commonly had their worlds recast from the shelter and security of home to the freedom and responsibilities of campus life. With so much of their lives' foundations having shifted, it is no wonder their long-term goals might remain dreamlike. Even choosing a major is freighted with import and destiny. The "Research in Discipline" project empowers students to sharpen their vision of the future as a statement of mission and to develop an outline for achieving that mission. The class discussions create useful bonds, as do the connections made with faculty and staff across campus as part of the research process. Inquiries into expenses as well as funding opportunities address the primary threat to student retention: financial stress. Learning about networking through clubs and organizations casts support lines into the future. Exploring the potential for graduate school and the specifics of a career start to build the path to a productive destination, one which assumes graduation as a given. If first-semester composition professors can improve their students' writing and thinking skills, they do much toward increasing student success. If, while helping students develop those skills, professors using a variation of the "Research in Discipline" paper can also assist in focusing immediate and long-term goals to help students develop proficiency in planning and resources for fruition, so much the better.

Professors teach to the future. We understand that students attend college with a dream. In these dreams, to paraphrase the poet W. B. Yeats, responsibilities are born.[1] To assist first-year students in taking adult responsibilities seriously, we can ask students about and help them focus their ambitions. This represents an initial step in building first-year student motivation toward perseverance. Friedrich Nietzsche (2003) points out "If we possess our *why* of life we can put up with almost any *how*." The "Research in Discipline" paper helps students focus both their *why* to study and their *how* to persist in achieving their dreams.

[1] The statement "In dreams begin responsibilities," generally attributed to Yeats, actually occurs in the epigraph to the 1904 publication of *Responsibilities and Other Poems.* Yeats attributes it simply to an "Old play."

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Concluding Thoughts

Contributing Editors

Gerry W. McLaughlin
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William E. Knight

Student Success and Campus Culture: Helping an Institution Believe

Tim Hall
President, Austin Peay State University

More than ever before, student success is everyone's business. Colleges and universities have experienced a Copernican-like revolution over the past generation. Under the older view, "the professor teaching" was at the center of the higher education universe. Under this view, it did not really matter whether students succeeded, so long as institutions of higher learning carried out their teaching missions. In fact, we frequently looked upon student failure as evidence of rigorous teaching. "Look to the right of you; look to the left of you. One of those students will not be here at the end of the semester," our deans would say, not with chagrin, but with academic pride. Student failure, we once believed, validated our rigor. Under the new view, though, "the student learning" occupies the central place in the academic universe. We are increasingly dissatisfied with teaching that does not yield learning as its fruit, with enrollments not accompanied by persistence and graduation. We are dissatisfied not only because yesterday's graduation results are not equal to the needs of tomorrow's economy, but because we know that some forms of teaching yield more fruit than others. Moreover, we increasingly see examples of institutional practice that support the persistence and graduation of our students. Such examples summon us to action on our campuses. We know we cannot replace the efforts of our students toward their own academic success, but—increasingly—we know there are things we can do to support their efforts. We can, as George Kuh and his colleagues remind us, create "conditions that matter" for student success (Kuh et al., 2005/2010).

Creating conditions that matter begins at the level of campus culture. A college or university may implement this practice or that process intended to promote the persistence and graduation of its students. But the results of these implementations will likely be limited and isolated when they do not arise out of an institutional culture devoted to student success. Practices and processes antagonistic to institutional culture are generally doomed either to a short-lived or stunted existence. Furthermore, an institutional culture hostile to student success will seldom generate new practices or processes supportive of this success. Innovation in this area, if it occurs at all, will tend to be either top-down driven or an outlier.

How, then, do we create and sustain an institutional culture supportive of student success? We begin, I think, chiefly at the level of institutional belief, since culture inevitably forms itself around shared beliefs. On our campus at Austin Peay State University, we have seen two axioms take root in our collective thinking. First, our faculty and staff increasingly believe

that student success matters, not simply to our students, but to us. Second, they recognize that we can improve the success of our students without compromising academic quality.

An important part of a president's job is to help these two axioms flourish in an institution's daily thinking. For example, I spend a fair amount of time trying to help faculty and staff at my institution understand *how* student success matters to the institution. Of course, we have always wished our students well, but these well wishes mainly reflected a generally benevolent spirit toward our students rather than a clearheaded assessment of how student success or failure affects the institution itself. Now, though, because Tennessee bases 100% of state funding for higher education on performance, which is predominantly focused on persistence and graduation measures, student success is directly connected to our university's financial well-being and its ability to accomplish its mission. Furthermore, institutional reputations, including ours, are increasingly affected by the success of our students as more and more external observers judge institutional quality by measures such as student persistence and graduation. Whether we are faculty or staff or administrators, it is no longer possible to define the success of our work apart from the success of our students.

A campus culture supportive of student success also has to believe that the institution can help students succeed without compromising academic quality. I have never understood the claim that the only way to increase retention and graduation rates is to lower academic standards. To me, this is like a student saying the only way he can get better grades is to cheat. There are now numerous examples around the country of practices or programs that have increased student persistence without diluting academic rigor. In the spring of 2012, Austin Peay State University convened what might have been the first university-level college completion academy. Spanning Friday night and Saturday, faculty, staff, administrators, and students gathered to hear from experts around the country who shared their own stories of promoting student success. These experts helped our campus community understand the possibility of increasing graduations without compromising academic quality.

For faculty and staff on a particular campus to believe in the possibility of improving student success, though, it helps to find success stories on the campus itself. For example, at Austin Peay State University, we redesigned our developmental courses a few years ago and had our first taste of what was possible. We eliminated noncredit developmental courses and enrolled students with developmental deficiencies in credit-bearing courses with additional, required tutoring sessions. The result? An astonishing increase in students successfully completing the for-credit courses. These successes were not a product of diminished rigor. If anything, we raised the bar by requiring students with developmental deficiencies to attend additional tutoring sessions, and students rose to meet the new challenge. Since that experience, we have encouraged faculty to think about new ways of teaching their courses to improve student learning and success and have seen many of them respond with course redesigns. In creating these redesigns we are careful to seek assurances—through before and after testing, for example—that redesign successes are not simply the product of reduced academic vigor. We use micro grants to support course redesign, especially in our gatekeeper courses.

In all, our campus increasingly believes that student success matters and that we can help more of our students succeed without compromising academic quality. I'm convinced, though, that an institution can't be compelled to accept these beliefs. Top-down edicts may produce some kinds of institutional change, but I doubt whether they can produce change at the level of institutional belief. That kind of change requires patient persuasion in an atmosphere of collaboration, in which a community has an opportunity to consider the evidence for student success and to evaluate efforts to increase that success. In the first two years of Tennessee's performance-based funding model, Austin Peay has led the state's universities in increased performance-based funding. I don't think it is a coincidence that Austin Peay's recent success at helping more of our students succeed has been paired with the institution's recognition by *The Chronicle of Higher Education* as one of ten large four-year universities in the country on the honor roll of Great Colleges to Work For. No amount of believing in the axioms of student success by a president or a provost will produce the requisite culture. We must believe together.

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Epilogue

Charter Editors and Executive Director

What needs to be done in future research [*on students*] *is to examine the ways in which knowledge and personal development interact. For the most part, researchers who have studied personality development during the college years and after, or who have measured changes in students' attitudes and values, have done just that and no more. And researchers who have studied students' acquisition of knowledge and intellectual skills have done just that and no more. Each by itself is a major topic of inquiry. But we need to know more than we now know about how they fit together*. (Pace, 1979, pp. 173–74)

What we need in the study of organizations is a set of scales for measuring the amount, nature, and quality of the administrative effort or organizational effort intended to facilitate the attainment of organizational goals. If and when we can make that connection between activities and achievement, we may be able to answer, better than we can now, the question, How do we get from here to there? (Pace, 1979, p. 178)

During the past 30-plus years, the study of student success has expanded to include exploration of the relationships proposed by Pace in 1979. Through this work we have learned a great deal about the relationships between student success, student activities, and the policies and practices at our postsecondary institutions. In fact, student success has become a focal point for many policy discussions at the national level and with accrediting agencies. Frequently, however, student success is narrowly interpreted and measured as the student retention and graduation rates of first-time, full-time entering students—an increasingly smaller proportion of our students. These measures are often discussed within the context of student access, affordability, attainment, and achievement. At the campus level, however, student success must be understood from the perspective of the student's activities, academic achievement, and the organization's processes and policies. It is clear to us that if our postsecondary institutions are to achieve high levels of student success, it is essential that we collectively share our data, knowledge, and innovations. The purpose of the *Sourcebook* is to provide an outlet for the ever expanding body of knowledge among the higher education community of practice working to improve student success on our campuses.

In developing this volume, we fell back on the thinking, again, of Robert Pace (1998) and his discussion about the methodology of studying higher education. He suggests that the danger of approaching the study of higher education from the perspective of narrowly defined units of

interest will result in studies focused on "limited and easily defined topics" resulting in findings that are often of little significance institutionally (p. 34). Unlike in the physical and biological sciences, Pace argues that new insights and knowledge in the social sciences will come from "seeking to discover larger combinations of evidence, and understanding the way events and conditions fit together to create a major influence." (p. 34). This volume has been designed to be a dynamic document providing practitioners and researchers with an expanding source of evidence about the practices and factors influencing student success; a robust and dynamic data source for meta analyses.

In this volume, building bridges to student success is examined from three perspectives: cocurricular and student affairs activities, unique student groups, and institutional assessment and evaluation of student success. The chapters in the first three parts discuss specific topics related to student success from a national higher education perspective. The case studies in Part 4 describe the work of specific campuses in support of a unique student group. The authors of the chapters in the volume provide a template for future contributions.

In closing, we present a university president's perspective on the importance of focusing the institution on supporting student success. In this chapter, President Hall, Austin Peay University, discusses student success from the perspective of the campus CEO and his/her role in facilitating and building bridges across the campus, creating a culture focused on student success.

Finally, we leave you in the manner that we opened this epilogue—with the thinking of Robert Pace. We can think of no more fitting way to close this volume than with his words about the future of research in higher education and the importance of making connections across and within the institution:

> *My general interests and inclinations have been to look for relationships in their natural setting—between environments and attainments, between effort and outcomes, between the pattern of activities as college students and the pattern of activities as college alumni, between institutional purposes and institutional influences. I believe that making connections is a good way to stimulate new research and new insight. But who knows what connections will be important in the future? The size and shape of higher education as we know it today may be very different tomorrow. In any case, I am sure that higher education will continue to be a fascinating topic of research.* (1998, p. 34)

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