Chapter 2
Student Engagement: Bridging Research and Practice to Improve the Quality of Undergraduate Education

Alexander C. McCormick, Jillian Kinzie, and Robert M. Gonyea

Introduction

Engagement is in vogue. The term has proliferated widely in higher education, with civic engagement, community engagement, scholarship of engagement, and student engagement peppering the discourse. It has even penetrated the upper reaches of the organizational chart, with vice presidents, vice provosts, associate or assistant vice presidents and provosts, deans, and directors variously responsible for "engagement," "community engagement," "student engagement," and so on. But these various invocations of the term mean different things. Whereas civic and community engagement focus on the various ways that colleges and universities develop students' dispositions toward civic participation and advance the welfare of their surrounding communities (Bringle, Games, & Malloy, 1999; Saltmarsh & Hartley, 2011; Zlotkowski, 1997), student engagement refers to college students' exposure to and participation in a constellation of effective educational practices at colleges and universities (which may include practices that advance the civic and community engagement mission, such as service learning).[1] This chapter focuses on student engagement as a research-informed intervention to improve the quality of undergraduate education. We trace the emergence of the concept and its intellectual history; review measurement issues, empirical applications, and representative research findings; and provide illustrations of how student engagement connects to contemporary imperatives surrounding assessment and evidence-based improvement. We conclude with a discussion of challenges for student engagement and an assessment of what lies ahead for student engagement research and application.

A.C. McCormick, Ph.D. (✉) • J. Kinzie, Ph.D. • R.M. Gonyea, Ed.D.
Center for Postsecondary Research, Indiana University, 1900 E. 10th Street, Suite 419, Bloomington, IN, USA 47406
e-mail: amcc@indiana.edu; jikinzie@indiana.edu; rgonyea@indiana.edu

M.B. Paulsen (ed.), *Higher Education: Handbook of Theory and Research*,
Higher Education: Handbook of Theory and Research 28,
DOI 10.1007/978-94-007-5836-0_2,

Although the term student engagement is new to higher education, having emerged in the late 1990s, the ideas that it encompasses have been around for several decades. Before tracing this background, it's useful to consider the context in which student engagement emerged as a framework for understanding, diagnosing, and improving the quality and effectiveness of undergraduate education. This is a story of the confluence of two streams: one involving increasing interest in so-called process indicators and the other related to mounting frustration with the dominant conception of college and university quality in the United States. This background is closely intertwined with the development of the National Survey of Student Engagement (NSSE) and its counterpart, the Community College Survey of Student Engagement (CCSSE).

National Education Goals and the Use of "Process Indicators"

In 1989, President George H. W. Bush and the governors of the 50 states articulated a set of National Education Goals. The subsequent work of the National Education Goals Panel culminated in the Goals 2000: Educate America Act, signed into law by President Bill Clinton in 1994. The legislation set forth eight goals for American education to achieve by the year 2000. Although most of the goals focused on elementary and secondary education, the goal related to adult literacy and lifelong learning specified that "the proportion of college graduates who demonstrate an advanced ability to think critically, communicate effectively, and solve problems will increase substantially." The sustained discussion of national goals created the need to monitor progress toward their achievement. As related by Peter Ewell (2010) in his account of NSSE's origins, "The implied promise to develop the metrics needed to track progress on these elusive qualities… stimulated thinking about how to examine them *indirectly* by looking at what institutions did to promote them" (p. 86). Ewell and his colleagues at the National Center for Higher Education Management Systems (NCHEMS) produced a series of articles and reports proposing how "indicators of good practice" or "process indicators" might be productively deployed without the long delay and expense required to develop direct assessments of the outcomes set forth in the national goals (though they also endorsed the development of such assessments) (Ewell & Jones, 1993, 1996; National Center for Higher Education Management Systems [NCHEMS], 1994). Ewell and Jones (1993) also articulated the virtue of process measures for contextualizing what is learned from outcomes assessments, noting that "it makes little policy sense to collect outcomes information in the absence of information on key processes that are presumed to contribute to the result" (p. 125). Indeed, citing Astin's (1991) work on assessment in higher education, they asserted that "information on outcomes alone is virtually uninterpretable in the absence of information about key experiences" (p. 126). They suggested that process indicators related to good practices in undergraduate education have practical relevance, because their linkage to concrete activities offers guidance for interventions to promote improvement. In a report for the National Center for Education Statistics

on the feasibility of "good practice" indicators for undergraduate education, the NCHEMS team undertook a comprehensive review of the knowledge base and available information sources (NCHEMS, 1994). In the discussion of available surveys of current students, the Cooperative Institutional Research Program (CIRP) surveys and the College Student Experiences Questionnaire (CSEQ) were identified as bearing on a number of dimensions of "instructional good practice."[2]

Kuh, Pace and Vesper (1997) implemented the process indicator approach using CSEQ data from a diverse sample of institutions and students. They created indicators to tap three of Chickering and Gamson's (1987) seven "principles for good practice in undergraduate education" (student-faculty contact, cooperation among students, and active learning) and examined their relationship to students' self-reported learning gains in general education, intellectual skills, and personal and social development. The researchers concluded that CSEQ items could be combined to produce indicators of good practice in undergraduate education and that these indicators showed positive and consistent relationships to self-reported learning outcomes. Although the term "student engagement" did not appear in the article, it offered proof of concept of the process indicator approach and foreshadowed the development of a survey designed explicitly to provide process measures related to good practice in undergraduate education.

Discontent with the National Discourse on College Quality

The other stream contributing to the emergence of student engagement as a framework for assessing educational quality emerged from mounting discontent over the dominant conception of "college quality" in the national mind-set. Beginning in the 1980s, the news magazine *U.S. News & World Report* began publishing annual lists that purported to identify "America's Best Colleges" through a numeric ranking. Although the rankings received extensive criticism from both inside and outside the academy, they proved popular with the general public and, it is widely believed, provided an important source of revenue for the magazine (McDonough, Antonio, Walpole, & Perez, 1998).[3] They also received the implied endorsement of highly ranked colleges and universities that boasted of their standing in their recruitment and promotional materials. (This number was larger than one might expect because the magazine's editors shrewdly split the rankings into subgroups, such that each *Best Colleges* issue provided multiple lists and multiple high performers—in "national" universities and liberal arts colleges, eight regional rankings, separate rankings for public universities, "best value" rankings, and so on.)

While the rankings have been subject to a variety of philosophical and methodological objections (e.g., see Gladwell, 2011; Graham & Thompson, 2001; Machung, 1998; Thacker, 2008; Thompson, 2000), an enduring complaint has been their emphasis on reputation and input measures to the exclusion of any serious treatment of teaching and learning. Indeed, the first issue of the rankings was based solely on a reputation survey sent to college and university presidents, and when the rankings

methodology was later expanded to include other criteria, it was specifically engineered to reproduce the conventional wisdom that the most elite institutions are, in fact, the best (Thompson, 2000). If the rankings were no more than an innocent parlor game, their shortcomings would not have raised much concern. But repeated reports of strategic action by institutional personnel to influence their placement[4] raised serious concerns about the rankings' indirect influence on matters of institutional policy and resource allocation (Ehrenberg, 2002).

To be sure, *U.S. News* was not alone in motivating perverse choices in the pursuit of higher ranking and prestige. Rankings and classifications based on research activity have been another source of status competition that can lead administrators to allocate more resources to schools and departments that bring in high-dollar-value grants and contracts. But *U.S. News* was the self-proclaimed national arbiter of college quality, and its ranking criteria explicitly rewarded a narrow, wealth- and selectivity-based conception of quality that gave short shrift to teaching and learning. All of this occurred at a time when US higher education was confronting a range of serious challenges: the price of four-year college attendance had been steadily rising faster than the rate of inflation, as federal financial aid programs came to rely more heavily on loans than grants; states were shifting proportionally more of the cost of public higher education to students and families; colleges and universities were engaged in an array of costly tactics to enroll the most desirable students, such as differential pricing (tuition discounting) and the so-called war of amenities; and college completion rates were stagnant at less than 60%.

It was in this context that the Pew Charitable Trusts undertook to fund the development and implementation of a survey project focused on process indicators related to educational effectiveness at bachelor's degree-granting colleges and universities and subsequently at community colleges.[5] A fundamental design principle was that the survey would be heavily focused on behavioral and environmental factors shown by prior research to be related to desired college outcomes. About two-thirds of the original survey's questions were drawn or adapted from the CSEQ (Kuh, 2009).

NSSE's founding director, George Kuh, promoted the concept of student engagement as an important factor in student success and thus a more legitimate indicator of educational quality than rankings based on inputs and reputation. He described student engagement as a family of constructs that measure the time and energy students devote to educationally purposeful activities—activities that matter to learning and student success (Kuh, n.d.). From the outset, then, student engagement was closely tied to purposes of institutional diagnosis and improvement, as well as the broader purpose of reframing the public understanding of college quality. But it was also explicitly linked to a long tradition of prior theory and research, as we describe in the next section. Thus the concept of student engagement and the two university-based research and service projects organized around it, NSSE and CCSSE, represent an attempt to bridge the worlds of academic research and professional practice—to bring long-standing conceptual and empirical work on college student learning and development to bear on urgent practical matters of higher education assessment and improvement. We now turn to the intellectual heritage of student engagement.

The Conceptual Lineage of Student Engagement

Student engagement is not a unitary construct. Rather, it is an umbrella term for a family of ideas rooted in research on college students and how their college experiences affect their learning and development. It includes both the extent to which students participate in educationally effective activities as well as their perceptions of facets of the institutional environment that support their learning and development (Kuh, 2001, 2009). Central to the conceptualization of engagement is its focus on activities and experiences that have been empirically linked to desired college outcomes. These influences go back to the 1930s and span the fields of psychology, sociology, cognitive development, and learning theory, as well as a long tradition of college impact research. The concept also incorporates contributions from the field, in the form of practical evaluations of the college environment and the quality of student learning, pressure for institutions to be accountable for and to assess educational quality, concerns about student persistence and attainment, and the scholarship of teaching and learning.

The historical roots of student engagement can be traced to studies in the 1930s by educational psychologist Ralph Tyler, who explored the relationship between secondary school curriculum requirements and subsequent college success. At The Ohio State University, Tyler was tasked with assisting faculty in improving their teaching and increasing student retention, and as part of this work, he designed a number of path-breaking "service studies" including a report on how much time students spent on their academic work and its effects on learning (Merwin, 1969). Joining C. Robert Pace and other noted scholars, Tyler contributed his expertise in educational evaluation and the study of higher education environments to the Social Science Research Council's Committee on Personality Development in Youth (1957–1963), which furthered the study of college outcomes by turning attention to the total college environment. The committee concluded that outcomes do not result from courses exclusively, but rather from the full panoply of college life (Pace, 1998). This focus on both student and environmental factors related to college success became an important area of study for Pace, who went on to develop a number of questionnaires for students to report on the college environment. Pace's studies of college environments documented the influence of student and academic subcultures, programs, policies, and facilities, among other factors, and how they vary among colleges and universities.

Tyler's early work showing the positive effects on learning of time on task was explored more fully by Pace (1980) who showed that the "quality of effort" students invest in taking advantage of the facilities and opportunities a college provides is a central factor accounting for student success. He argued that because education is both process and product, it is important to measure the quality of the processes, and he used the term quality of effort to emphasize the importance of student agency in producing educational outcomes. In recollecting the development of these ideas, he wrote:

> We have typically thought of educational processes in terms of what they contribute to the product; but we know that some processes are qualitatively better than others, just as some products are better than others, so perhaps we should give more thought to measuring the

> quality of the processes. One motivation for my desire to measure student effort was the recurring rhetoric about accountability that always blamed the institution for outcomes… This assumes that the student is buying a product when actually the student, at a later point in time, is the product. So, the other side of accountability is the quality of effort students invest in using the facilities and opportunities the college provides. (Pace, 1998, p. 28)

Pace's instrument, the CSEQ, was created with substantial conceptual backing to operationalize "student effort," defined as a straightforward measure of facility use so that students "would immediately know whether they had engaged in the activity and about how often" (Pace, 1998, p. 29). The quality of effort construct rested on the assertion that the more a student is meaningfully engaged in an academic task, the more he or she will learn. Pace found that students gained more from their college experience when they invested more time and effort in educationally purposeful tasks such as studying, interacting with peers and faculty about substantive matters, and applying what they are learning to concrete situations. Importantly, he distinguished quality of effort from motivation, initiative, or persistence. Although it incorporates these elements, it takes place within a specific educational context, and its strength depends on the context.

Student engagement is also rooted in the work of Alexander Astin (1984) who articulated a developmental theory for college students focused on the concept of involvement, or "the amount of physical and psychological energy that the student devotes to the academic experience" (p. 297), and that what students gain from the college experience is proportional to their involvement. This involvement can be academic, social, or extracurricular. Astin hypothesized that the more involved the student is, the more successful he or she will be in college. He acknowledged that the concept of involvement resembles that of motivation, but distinguished between the two, arguing that motivation is a psychological state while involvement connotes behavior. These key ideas of time on task, quality of effort, and involvement all contribute to the conceptualization of student engagement.

Both Pace (1969, 1980) and Astin (1970, 1984) emphasized the important role of the college environment and what the institution does or fails to do to in relation to student effort and involvement. In contrast to models of college impact that viewed the student as a passive subject, Pace (1964, 1982) conceived of the student as an active participant in his or her own learning and that one of the most important determinants of student success is the active participation of the student by taking advantage of a campus's educational resources and opportunities. Pace (1998) characterized his work as an examination of relationships in their "natural setting," between environments and attainment, effort and outcomes, and patterns of college students' activities and institutional influences. Astin (1984) further articulated the vital role of the institution, in stating that the "effectiveness of any educational practice is directly related to the capacity of that policy or practice to increase involvement" (p. 298).

Another root in the student engagement family tree is Tinto's concept of integration. The term integration refers to the extent to which a student (a) comes to share the attitudes and beliefs of peers and faculty and (b) adheres to the structural rules and requirements of the institution (Pascarella & Terenzini, 1991; Tinto,

1975, 1993). Tinto (1975, 1993) proposed his theory of academic and social integration to explain voluntary student departure from an institution. He defined integration with regard to a student's social and academic connection to the campus. Social integration refers to a student's perceptions of interactions with peers, faculty, and staff at the institution as well as involvement in extracurricular activities. Academic integration refers to a student's academic performance, compliance with explicit standards of the college or university, and identification with academic norms. Tinto's was one of the first theories that viewed voluntary departure as involving not just the student but also the institution. Described as an "interactionist" theory because it considers both the person and the institution, Tinto (1986) shifted responsibility for attrition from resting solely with the individual student and his or her personal situation to include institutional influences. Informed by Tinto's work, student engagement incorporates a student's interactions with peers and faculty and the extent to which the student makes use of academic resources and feels supported at the institution.

Pascarella's (1985) "general causal model for assessing the effects of differential college environments on student learning and cognitive development," or more simply, the general causal model, expanded on Tinto's work by incorporating institutional characteristics and quality of student effort and by linking to more outcomes than retention. Pascarella theorized that students' precollege traits correlate with institutional types and that both of these influence the institutional environment and interactions with agents of socialization, such as faculty members, key administrators, and peers. Pascarella also acknowledged that student background has a direct effect on learning and cognitive development, beyond the intervening variables. By including quality of student effort, Pascarella affirmed Pace's (1984) notion that students' active participation in their learning and development is vital to learning outcomes. Pascarella viewed quality of effort as influenced by student background and precollege traits, by the institutional environment, and by interactions with agents of socialization. Tinto's and Pascarella's emphases on students' interactions with their institution and on institutional values, norms, and behaviors provide the basis for the environmental dimensions of student engagement.

Both Astin's (1985) input-environment-output model, or I-E-O model, and Pascarella's general causal model have been used in student engagement research (see Pike, 1999, 2000; Pike & Killian, 2001; Pike, Kuh, & Gonyea, 2007). Pike and Kuh (2005a) employed elements of Astin's I-E-O model of college effects and Pascarella's causal model as conceptual frames to examine how the college experiences of first- and second-generation college students affect their learning and intellectual development.

In *The Impact of College on Students* (1969), Feldman and Newcomb synthesized some four decades of findings from more than 1,500 studies of the influence of college on students. Subsequent reviews by Bowen (1977), Pace (1979), and Pascarella and Terenzini (1991, 2005) synthesized research on college students and collegiate institutions from the mid-1920s to the early twenty-first century. One unequivocal conclusion, wholly consistent with Pace's and Astin's work, is that the impact of college on learning and development is largely determined by individuals' quality of

effort and level of involvement in both the curricular and cocurricular offerings on a campus. Rather than being mere passive recipients of college environmental effects, students share responsibility for the impact of their own college experience.

The literature on effective teaching and learning also contributes to the conceptualization of student engagement. In setting forth a set of principles of good practice in undergraduate education, Chickering and Gamson (1987) provided a concise summary of 50 years of educational research about teaching and learning activities most likely to contribute to learning outcomes. This concise piece—only four pages of text—has had a notable impact on how educational effectiveness is understood and promoted in higher education. In a footnote, the authors acknowledge the assistance of a virtual Who's Who of higher education research and policy, including Alexander Astin, Howard Bowen, Patricia Cross, Kenneth Eble, Russell Edgerton, Jerry Gaff, C. Robert Pace, and Marvin Peterson. Chickering and Gamson distilled the research into seven lessons for good teaching and learning in colleges and universities, including (1) student-faculty contact, (2) cooperation among students, (3) active learning, (4) providing prompt feedback, (5) emphasizing time on task, (6) communicating high expectations, and (7) respecting diverse talents and ways of learning. Chickering and Gamson's commonsense principles were intended to guide faculty members, administrators, and students, with support from state agencies and trustees, in their efforts to improve teaching and learning. They argued that while each practice can stand alone, when all are present their effects multiply, and that combined, they can exert a powerful force in undergraduate education. They also asserted the responsibility of educators and college and university leaders to foster an environment favorable to good practice in higher education. The principles emphasize the responsibility of leaders and educators to ensure that students engage routinely in high levels of effective educational practice. Multivariate longitudinal analyses of these practices at a diverse group of 18 institutions have shown them to be related to cognitive development and several other positive outcomes, net of a host of control variables (Cruce, Wolniak, Seifert, & Pascarella, 2006).

Similarly, as part of their comprehensive reviews of research on college impact, Pascarella and Terenzini (1991, 2005) concluded that a range of pedagogical and programmatic interventions such as peer teaching, note-taking, active discussion, integration across courses, and effective teaching practices increase students' engagement in learning and academic work and thereby enhance their learning and development. In *How College Affects Students* (1991), the authors concluded that "the greater the student's involvement or engagement in academic work or in the academic experience of college, the greater his or her level of knowledge acquisition and general cognitive development" (p. 616).

Recent Developments

More recently, participation in "high-impact practices," activities such as learning communities, undergraduate research, and service learning, has proven to be a promising way to promote student engagement and help students achieve the learning

and personal development outcomes essential for the twenty-first century (Association of American Colleges and Universities [AAC&U], 2007; Kuh, 2008). High-impact practices make a claim on students' time and energy, in ways that may require close interaction with faculty or diverse others and that call upon students to apply their learning in novel situations, and they are correlated with deep approaches to learning (NSSE, 2007). Providing students with opportunities to apply and test what they are learning through problem solving with peers inside and outside the classroom, study abroad, internships, and capstone experiences helps students develop habits of the mind and heart that promise to stand them in good stead for a lifetime of continuous learning. For instance, Zhao and Kuh (2004) show that students who participated in a learning community were more engaged across the board in other educationally purposeful activities compared with their counterparts who had not participated in such a program. They interacted more with faculty and diverse peers, they studied more, and they reported a stronger emphasis in courses on higher-order cognitive activities such as synthesizing material and analyzing problems. They also reported gaining more from their college experience.

Over the last decade, educators have contributed to the understanding of student engagement from a pedagogical standpoint. For example, Barkley (2010) developed a classroom-based model for understanding student engagement that emphasizes engagement as both a process and product of the interaction between motivation and active learning. Scholars such as Kathleen Gabriel (2008) have explicated the value of engagement for teaching underprepared students. Other teaching and learning research (e.g., Ahlfeldt, Mehta, & Sellnow, 2005; Smith, Sheppard, Johnson, & Johnson, 2005) explored classroom-based pedagogies of engagement, particularly cooperative- and problem-based learning that enhance student involvement in learning, and urged faculty to consider how students engage in their college experience in both formal and informal ways. These examples of the intersection of the scholarship of teaching and learning with student engagement demonstrate the connection of student engagement to educational practice, as well as a commitment to improvement driven by classroom-based evidence and insights.

From the perspective of involvement, quality of effort, academic and social integration, as well as principles of good practice in undergraduate education, student engagement can be seen as encompassing the choices and commitments of students, of individual faculty members, and of entire institutions (or schools and colleges within larger decentralized institutions). Students' choices include their quality of effort and their involvement in educational experiences and activities (both inside and outside of class). They choose among courses or course sections, and they also make choices within their courses. In choosing courses, they may consider not just the course content, schedule, and what they know about the instructor but also the amount and type of work required. Once enrolled, they make decisions about how to allocate their effort. Students also make choices about whether and how to associate with their fellow students, be it through formal cocurricular activities or informally. The relevant choices and commitments of faculty and institutions, on the other hand, relate primarily to the principles for good practice in undergraduate education. Faculty members choose the learning activities and opportunities in their

courses, they convey their expectations to students, they decide on the nature and timing of feedback provided to students, they facilitate student learning outside of class through formal and informal means, and so on. Institutional leaders and staff establish norms and allocate resources to support student success. For example, library and student affairs professionals create supportive learning environments and provide programs, speakers, and events that enrich the undergraduate experience. Through their policies and practices, institutional leaders communicate shared norms and standards for students, faculty, and staff with regard to student challenge and support.

The intellectual heritage reviewed in this section establishes the conceptual understanding of college impact that undergirds student engagement as an agenda for both promoting student success and enriching the impoverished national discourse on college quality. It also demonstrates the linkage between student engagement and the world of practice, thereby connecting to contemporary reform movements such as the scholarship of teaching and learning. If individual effort is critical to learning and development, then it is essential for colleges and universities to shape experiences and environments so as to promote increased student involvement.

Measuring Student Engagement

From a conceptual standpoint, student engagement represents the blending of related theoretical traditions seeking to explain college students' learning, development, and success with a set of practical prescriptions for good practice in undergraduate education. The *measurement* of student engagement is rooted in both a long tradition of survey research in higher education and more recent calls for process indicators to assess progress toward national goals for undergraduate education. In this section, we discuss the measurement of student engagement by shifting the focus to two widely adopted surveys designed to assess college-level student engagement, the National Survey of Student Engagement and the Community College Survey of Student Engagement.

As the Director of Education for the Pew Charitable Trusts, Russ Edgerton (1997) proposed a grant project to improve higher education, focused on the belief that *what* students learn is affected by *how* they learn. Edgerton argued for "new pedagogies of engagement" to help students acquire the abilities and skills for the twenty-first century. Launched in 2000 with support from the Pew Trusts, NSSE is administered in the spring as either a sample- or census-based survey of first-year and senior students. With support from both the Pew Trusts and the Lumina Foundation, CCSSE was adapted from NSSE in 2001 to address the distinctive features and needs of community colleges and their students while preserving appropriate parallelism (Community College Survey of Student Engagement [CCSSE], 2010a, 2010b). Like NSSE, CCSSE is administered in the spring, but without limitation on a student's year in school, instead collecting information about the number of credit hours earned by each respondent.

Surveys provide a cost-effective way to learn directly from students about their experiences. But survey research confronts a number of challenges. First, respondents must elect to participate. Response rates represent an ongoing concern. As colleges and universities respond to calls to establish a "culture of evidence," students are increasingly asked to participate in a variety of surveys and standardized learning assessments. The advent of inexpensive and easy-to-use online survey tools effectively allows anyone to survey students, adding to the survey burden. Consequently, survey response rates are falling: NSSE's average institutional response rate has fallen by about 10 points since inception.

Having chosen to complete a survey, respondents must make a good-faith effort to respond with honesty and candor. Respondents need to understand the question being asked in a way that aligns with the survey designer's intent, to retrieve and process the information required to formulate an answer, and, in the case of a closed-ended survey like NSSE or CCSSE, to convert the answer to fit within the response frame (Tourangeau, Rips, & Rasinski, 2000). Citing prior research on self-reported data, Kuh et al. (2001) identify five conditions as conducive to the validity of self-reports, noting that the NSSE instrument was designed to meet them. The five conditions are the following:

> (1) the information requested is known to the respondents; (2) the questions are phrased clearly and unambiguously; (3) the questions refer to recent activities; (4) the respondents think the questions merit a serious and thoughtful response; and (5) answering the questions does not threaten, embarrass, or violate the privacy of the respondent or encourage the respondent to respond in socially desirable ways. (p. 9)

Survey Content

Student engagement incorporates both behavioral and perceptual components. The behavioral dimension includes how students use their time in- and outside of class (e.g., asking questions, collaborating with peers in learning activities, integrating ideas across courses, reading and writing, interacting with faculty) as well as how faculty members structure learning opportunities and provide feedback to students. Because beliefs and attitudes are antecedents to behavior (Bean & Eaton, 2000), perceptions of the campus environment are a critical piece in assessing a student's receptivity to learning. The perceptual dimension thus includes students' judgments about their relationships with peers, faculty, and staff; their beliefs that faculty members have high expectations of students; and their understanding of institutional norms surrounding academic activities and support for student success. Both dimensions were incorporated in the design of the NSSE and CCSSE surveys (Fig. 2.1). A key criterion in NSSE's design (and subsequently, that of CCSSE) was that the survey content would be selected based on prior empirical evidence of a relationship to student learning and development—research emerging from the conceptual traditions previously discussed (Ewell, 2010).[6]

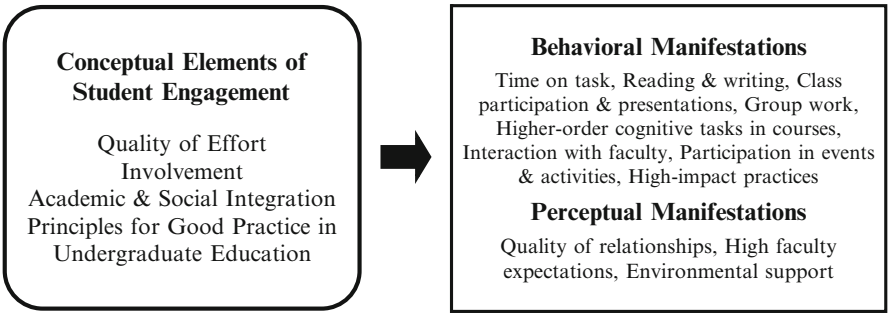

Fig. 2.1 Conceptual elements of student engagement and selected manifestations

Because of their strong emphasis on student *behavior*, surveys of student engagement differ markedly from widely used surveys of college students that examine their values and attitudes or their satisfaction with the college experience. The focus on behavior is both concrete and actionable: when results fall short of what is desired, the behavioral measures suggest avenues of intervention. For illustration purposes, Table 2.1 presents selected NSSE questions assessing active and collaborative learning activities, prompt feedback from faculty, faculty expectations, amount of reading and writing, time devoted to class preparation, quality of campus relationships, and perceived institutional emphases. (The full survey instrument may be viewed at nsse.iub.edu/links/surveys; some questions have been modified for an updated version of the survey launching in 2013).

Another noteworthy feature of NSSE and CCSSE is uniform, centralized administration procedures: sampling, invitation messages, follow-up messages to nonrespondents (NSSE only), data file creation, and tabulation of results are all managed centrally.[7] This uniformity of procedures ensures the comparability of results across institutions, which is related to another design principle for these surveys: results should provide participating institutions a suitable context for interpreting their results. Comparability of results across institutions means that faculty and administrators at participating institutions can interpret their student engagement findings relative to a meaningful comparison group and also make meaningful internal comparisons (e.g., among different schools or colleges within a university).

NSSE and CCSSE Benchmarks of Effective Educational Practice

The effort to focus the attention of campus leaders and faculty members on student engagement is ultimately about creating campus environments that are rich with opportunities for engagement. Because the institution has a substantial degree of influence over students' learning behaviors, perceptions, and environments (Pascarella & Terenzini, 2005), student engagement data provide valuable

Table 2.1 Representative NSSE questions

In your experience at your institution during the current school year, about how often have you done each of the following? [Very often/Often/Sometimes/Never]
Asked questions in class or contributed to class discussions
Made a class presentation
Worked on a paper of project that required integrating ideas or information from various sources
Worked with classmates **outside of class** to prepare class assignments
Discussed ideas from your readings or classes with faculty members outside of class
Received prompt written or oral feedback from faculty on your academic performance
Worked harder than you thought you could to meet an instructor's standards or expectations
During the current school year, about how much reading and writing have you done? [discrete ranges]
Number of assigned textbooks, books, or book-length packs of course readings
Number of written papers or reports of **20 pages or more**
Number of written papers or reports of **between 5 and 19 pages**
Number of written papers or reports of **fewer than 5 pages**
During the current school year, about how often have you done each of the following? [Very often/Often/Sometimes/Never]
Attended an art exhibit, play, dance, music, theater, or other performance
Examined the strengths and weaknesses of your own views on a topic or issue
Tried to better understand someone else's views imagining how an issue looks from his or her perspective
About how many hours do you spend in a typical 7-day week doing each of the following? [discrete ranges]
Preparing for class (studying, reading, writing, doing homework or lab work, analyzing data, rehearsing, and other academic activities)
Select the circle that best represents the quality of your relationships with people at your institution [7-point scale with specified anchors at each end of the scale]
Relationships with **other students** [Unfriendly, Unhelpful, Sense of alienation…Friendly, Helpful, Sense of belonging]
Relationships with **faculty members** [Unavailable, Unhelpful, Unsympathetic…Available, Helpful, Sympathetic]
To what extent does your institution emphasize each of the following? [Very much/Quite a bit/Somewhat/Very little]
Spending significant amounts of time studying and on academic work
Providing the support you need to help you succeed academically
Encouraging contact among students from different economic, social, and racial or ethnic backgrounds
Attending campus events and activities (special speakers, cultural performances, athletic events, etc.)

Source: National Survey of Student Engagement, The College Student Report (Web version). Adapted from http://nsse.iub.edu/pdf/survey_instruments/2012/NSSE2012_US_English_Web.pdf
Notes: Response frame indicated in brackets. Some items have been modified for a 2013 update of the survey.

diagnostic information for institutional leaders, faculty, and others to consider how and where to exert their efforts. For this reason, assessments of student engagement are said to provide actionable information for the institution (Kuh, 2009). NSSE and CCSSE were designed to serve as benchmarking tools that institutional leaders can use to gauge the effectiveness of their programs by comparing results for their students against those from a group of comparison institutions. A benchmarking approach assumes that the unit of analysis is the institution and that the group-level score is reliable. Generalizability studies have shown that NSSE's engagement measures are dependable measurements of group means (Fosnacht & Gonyea, 2012; Pike, 2006a, 2006b). Of course, group scores need not be limited to entire institutions. Institutions can and should drill down into their engagement data by computing group scores for different types of students such as by socio-demographic characteristics, transfer status, residence, college or major, or participation in special programs such as a learning community or a student-faculty research initiative.[8]

As survey-based assessments intended to inform educational practice, both NSSE and CCSSE confront the challenge of condensing results from a large number of individual items into readily understood summary measures for use by institutional personnel with varying levels of quantitative sophistication. Both projects compute summary measures that combine thematically related items into what they call "Benchmarks of Effective Educational Practice." The NSSE benchmarks include Level of Academic Challenge, Active and Collaborative Learning, Student-Faculty Interaction, Enriching Educational Experiences, and Supportive Campus Environment. In describing the NSSE benchmarks, Kuh (2001) wrote that they "represent educational practices that resonate well with faculty members and administrators" while they are also "understandable to people outside the academy like parents of prospective students, accreditors, and so on" (p. 14). Reflecting both common and distinctive concerns of community colleges, CCSSE's benchmarks include Academic Challenge, Active and Collaborative Learning, Student-Faculty Interaction, Student Effort, and Support for Learners. Although factor analytic procedures informed the creation of the NSSE and CCSSE benchmarks, these results were combined with expert judgment to created clusters that would have clear face validity and actionable import for institutional users (Kuh, 2003, 2009; Marti, 2009). While the benchmarks are organized thematically, they do not necessarily represent unitary constructs. Indeed, close examination of the constituent elements of some benchmarks makes this plain (see McCormick & McClenney, 2012). But the NSSE project's publication of reliability coefficients for benchmarks and the use of benchmarks in published research as if they were scales may have obscured their nature as composite measures rather than psychometrically pure scales. Misunderstanding and mixed messages about the nature of the benchmarks has led some researchers to investigate their dimensional structure and criticize them as psychometrically inadequate or unjustified (see, e.g., Campbell & Cabrera, 2011; LaNasa, Cabrera, & Transgrud, 2009; Porter, 2011). However, McCormick and McClenney (2012) have argued that this approach overlooks what the benchmarks represent and how they were constructed.

NSSE Deep Approaches to Learning Scale

Informed by Bloom's taxonomy of educational objectives, a set of items on the NSSE and CCSSE surveys asks about the cognitive tasks emphasized in courses (i.e., memorization, analysis, synthesis, making judgments, and application). Other NSSE items tap the frequency with which students integrate learning from different sources and contexts, examine or revise their prior understanding as a result of their learning, or entertain others' perspectives. NSSE researchers have used these items (minus memorization) to form a "deep approaches to learning" scale comprising three subscales: higher-order learning, integrative learning, and reflective learning (Nelson Laird, Shoup, & Kuh, 2006; Nelson Laird, Shoup, Kuh, & Schwarz, 2008). The deep approaches to learning scale offers a further perspective on student engagement by linking to cognitive science research distinguishing "surface-level" and "deep" processing as well as findings relating deep processing to learning outcomes (Marton & Säljö, 1976a, 1976b, 1984).[9]

Conceptual and Methodological Questions

Because NSSE and CCSSE assess student engagement cross-sectionally, one cannot conclusively rule out the possibility that engagement merely reflects differences in students' predisposition to participate in educationally purposeful activities. But evidence from the Beginning College Survey of Student Engagement (BCSSE) suggests that high school engagement does not account for differential outcomes among students with different levels of engagement during the first year of college. BCSSE asks entering college students about their academic and cocurricular experiences in high school and their expectations for engagement (i.e., their expectations to participate in a range of activities representing engagement) during the first year of college. A 2008 analysis of BCSSE data used a simple measure to represent engagement disposition—an estimate of the likelihood that a student would evidence engagement in the first year of college, based on reported engagement behaviors in high school and expectations for the first year of college—then examined actual engagement and the relationship of both (disposition and first-year engagement) to a student's intent to return for the second year (NSSE, 2008). While engagement disposition was indeed related to first-year engagement, the results showed that actual first-year engagement trumps disposition in predicting intent to return. Regardless of a student's precollege engagement disposition, more challenging coursework, collaborative learning, and interactions with faculty were positively related to higher inclinations to return the following year. This finding suggests that variations in first-year engagement reflect more than individual differences in prior inclinations and preferences and have an independent relationship to outcomes.

Although prior research has generally supported the use of self-reported data on college students (see Pace, 1985; Pike, 2011), Porter (2011) has raised questions about the validity of college student surveys in general, using NSSE as an example.

The core objections can be distilled down to four assertions: (1) NSSE's content domain is "overly broad" (p. 51), and a sufficient theoretical rationale for every item on the survey has not been provided; (2) stages of the response process articulated by Tourangeau et al. (2000) pose validity challenges related to comprehension, recall, judgment, and response; (3) the dimensional structure and reliability of NSSE's data reduction scheme (the Benchmarks of Effective Educational Practice, previously discussed) are inadequate; and (4) evidence of relationships between measures of student engagement and other measures for which a relationship is expected is inadequate.

The complaint about the content domain comes as no surprise. As explicated above, student engagement weaves together a variety of content areas in the interest of providing research-informed evidence in service to the improvement of undergraduate education. In this regard, student engagement is inherently untidy and lacking in parsimony, because surveys of student engagement were not created with the aim of theory building or of testing a narrow theoretical construct. On the other hand, while researchers may cherry-pick questions on the survey and assert an inadequate theoretical underpinning, there is in fact ample literature undergirding most questions on the NSSE and CCSSE surveys. Indeed, CCSSE's Web site even provides a representation of the survey with each question hyperlinked to an annotated bibliography (see http://www.ccsse.org/aboutsurvey/biblio/page1.cfm). At a deeper level, this objection illustrates how the standards and objectives of pure research may be at odds with the needs of practice (Altbach, 1998; Keller, 1985; Terenzini, 1996).

Much of the critique regarding the response process is characterized by speculation, unwarranted generalization, and selective use or exclusion of evidence, as well as simply noting inherent and well-known limitations of survey research (see McCormick & McClenney, 2012 for detailed elaboration of these points). Conspicuously absent are any references to published research documenting the extensive testing of NSSE's questions with hundreds of students at more than a dozen institutions using focus group and cognitive interview techniques. Reporting the results of this work, Ouimet, Bunnage, Carini, Kuh and Kennedy (2004) concluded that "[g]enerally, students found the questions to be clearly worded and easy to understand. The number of items that prompted discussion [in focus groups] was relatively small, less than 10% in most focus groups" (p. 240) and that the "majority of students interpreted the questions in identical or nearly identical ways" (p. 247). In this work, questions found to be problematic were rephrased, and the modified items were then tested through cognitive interviews. Subsequent research replicated this approach to examine item function among students of color and at minority-serving institutions, with comparable findings (Kuh, Kinzie, Cruce, Shoup, & Gonyea, 2007).

These concerns notwithstanding, some elements of the response process critique merit investigation. For instance, questions have been raised about the current-year time frame underlying NSSE questions. While shortening the frame to, say, 48 hours or even a week would introduce new validity challenges related to rhythms of the academic calendar (McCormick & McClenney, 2012), such variations in question

framing should be investigated. Porter (2011) also recommends the use of time diary methods as an alternative to using surveys to measure student behavior. Although diary methods have their own validity issues (Bolger, Davis, & Rafaeli, 2003), it could be valuable to investigate what differences might exist between survey and time diary or time-sampling methods in characterizing the behavior of college students.

Regarding the matter of relationship to other measures, we note simply that much of the validity critique addressed at NSSE relies heavily on standards of criterion validity—the expectation that a survey response on a question about number of papers assigned or college grades, for example, would match an objective source of the same information. This represents both a narrow conception of validity and a fundamental misunderstanding of how NSSE data are typically used: to make relative comparisons among groups of students. What matters is not a point estimate of the number of pages written, but that certain groups—STEM majors, part-time students, or students attending larger institutions—may write more or less than their peers. Indeed, Pike (1995) concluded that, for making intergroup comparisons, self-report data lead to similar conclusions as would be reached using more accurate objective measures. This bears on conventional understandings of validity, which emphasize that validity judgments are inextricably linked to the proposed *uses* of assessment information (see Borden & Young, 2007).

Whereas some view NSSE as spanning an overly broad content domain, Dowd, Sawatzsky and Korn (2011) fault NSSE and CCSSE for construct *underrepresentation*. Specifically, they take issue with the quality of effort paradigm, arguing that it fails to take account of intercultural effort on the part of minority-group students. But they go further, calling for surveys to measure "all aspects of 'student effort'" (p. 22). This raises questions about the scope of the concept. The argument also implies that intercultural effort applies only to racial/ethnic minorities, without providing any theoretical justification for the limitation. Might it not also be relevant to a range of "otherness" relative to the majority, such as students with disabilities or first-generation college students, for example? These questions suggest the need for further theoretical development to articulate the reach and limits of a comprehensive understanding of student effort. The article also inexplicably overlooks relevant content on the NSSE and CCSSE surveys. While the authors offer a valuable first step toward "theoretical foundations and a research agenda to validate measures of intercultural effort" (the title), it is never clearly articulated why such measures belong within the student engagement framework as opposed to other assessments of institutional climate. (See McCormick & McClenney, 2012, for a more comprehensive response to this critique.)

Given the purposes of student engagement surveys, it's important to say a word about face validity. In questioning the validity of college student surveys, Porter (2011) chides survey researchers for what he judges an excessive emphasis on face validity. This reveals a fundamental disconnect between the ideals of pure research and what may be required to gain the attention and interest of faculty and administrators who come from a wide variety of disciplinary backgrounds. Indeed, face validity is arguably a *necessary condition* for convincing key constituencies that a worrisome gap exists between our aspirations for the college experience and the

lived experience of college students. In this respect, skepticism about the value of face validity is emblematic of the dangerous gap that sometimes exists between what researchers value and what institutional leaders and policy makers need (see Keller, 1985; Kezar, 2000).

We acknowledge that surveys of student engagement are blunt instruments that yield imperfect information (a fact that on its own helps to explain modest correlations with various outcome measures). But we believe strongly that (1) imperfect information is more useful than no information and (2) action on the imperative to improve higher education cannot be deferred until the research community can develop substantially error-free measurement approaches (see Ewell, McClenney, & McCormick, 2011).

Empirical Applications and Synthesis of Findings

Studies that link student engagement to college outcomes such as critical thinking, moral development, and leadership capacity or to other indicators of success such as grades, persistence, and graduation help faculty and institutional leadership understand student success so they can design faculty development programs, revise curricula, develop student support programs, and redirect resources where they can be most effective. In this section, we examine illustrative findings using NSSE and CCSSE data showing how student engagement corresponds to a range of desired outcomes.

The Wabash National Study of Liberal Arts Education (WNSLAE) has provided some of the strongest recent evidence about the relationships between students' experiences and their learning and development. Administered by the Wabash College Center of Inquiry in the Liberal Arts, WNSLAE used a longitudinal design incorporating pre- and posttests to gather evidence on the contribution of effective teaching practices and learning experiences to outcomes, as well as the institutional conditions that foster them within the framework of a liberal arts education. Since its pilot in 2005, the study has collected data from over 17,000 students enrolled at 49 US colleges and universities (not limited to liberal arts colleges). WNSLAE examined student learning and development using quantitative measures of six broad liberal education outcomes: critical thinking and problem solving, inclination to inquire and orientation toward lifelong learning, intercultural effectiveness, leadership, moral reasoning, and personal well-being. The project also collected a wide array of information about the student experience, including measures of student engagement from NSSE (Blaich & Wise, 2011b).

Validating NSSE and CCSSE Engagement Measures

Pascarella, Seifert and Blaich (2010) used WNSLAE data from 19 institutions to examine the predictive validity of the NSSE benchmarks at the institution level by investigating their relationships to five WNSLAE outcomes (effective reasoning

and problem solving, moral character, inclination to inquire and lifelong learning, intercultural effectiveness, and personal well-being), assessed using seven instruments. The analysis was conducted using institution-level measures of both benchmarks and outcomes, controlling for the average institutional pretest score on the outcomes. The researchers found that four of the five NSSE benchmarks had at least one significant positive association with mean institution-level outcome scores after the first year of college, net of differences in the average pretest scores of their entering students. The one benchmark that did not show significant positive relationships with the outcomes was student-faculty interaction, and the researchers surmised that this reflects the wide range of reasons for students to meet with faculty, spanning the interests of high achievers to students experiencing academic difficulty.

Connecting the Dots

Early in NSSE's development, project researchers sought to investigate connections between student engagement and commonly examined outcomes such as persistence and grades. With support from the Lumina Foundation, a study called "Connecting the Dots" (CTD) explored the relationships between these indicators of student success and measures of student engagement and institutional practice. NSSE asked a diverse group of 18 bachelor's degree-granting institutions participating in the survey to subsequently provide student-level records on two key outcomes of college: persistence to the second year (for first-year students only) as indicated by enrollment in the fall semester following the spring NSSE administration and academic achievement as measured by full-year GPA (for both first-year students and seniors).[10] Additional student background information on family income, educational aspirations, precollege grades, and entrance examination scores was also collected for use as statistical controls. These data, gathered in the months *after* students completed the NSSE instrument, were merged with NSSE data and thus represented outcomes that emerged from the experiences and conditions for engagement reported on by the students. An additional goal of CTD was to determine the stability of the results for students from different racial and ethnic backgrounds, as well as students attending minority-serving institutions (Kuh, Cruce, Shoup, Kinzie, & Gonyea, 2008; Kuh et al., 2007).

CTD led to two conclusions about the effects of student engagement on academic achievement and persistence. First, engagement has significant positive, though modest, relationships with grades and persistence for students from different racial and ethnic backgrounds, even after controlling for a wide range of key precollege variables. Second, engagement has stronger effects on first-year grades and persistence to the second year for underprepared and historically underserved students (Kuh et al., 2008). In other words, these analyses showed that engagement pays greater dividends with regard to outcomes for the very populations that higher education most struggles to serve well.

CCSSE Validation Studies

In 2006, CCSSE researchers published the results of three validation studies commissioned to document the relationships between student engagement and key student outcomes such as academic performance as measured by grades and credit accumulation, persistence as indicated by course completion and re-enrollment, and degree or certificate completion (McClenney & Marti, 2006). Validation data connecting engagement to outcomes were obtained from three external student-level data sets: (a) Florida Department of Education records from the 28 Florida community colleges, (b) a consortium of Hispanic-serving community colleges, and (c) Achieving the Dream data from community colleges in five states. Findings showed significant positive associations between student engagement and outcomes, supporting the proposition that student engagement is related to student success in the 2-year sector.

Other Studies of the Relationship Between Student Engagement and Outcomes

Persistence. Student engagement activities are often linked with persistence toward educational goals. For example, engaging in high-impact activities and cocurricular involvements increased a first-year student's probability of returning for a second year, particularly for African American students (Kuh, 2008; Kuh et al., 2008). Others found that students who withdrew from their institution had lower levels of engagement than those who finished a second year at their institution (Hughes & Pace, 2003). Student persisters and graduates at two-year institutions were more likely to work collaboratively with other students, put more time into their studies, do more challenging academic work, interact more with faculty members in substantive ways, and had more positive ratings of the campus environment (McClenney & Marti, 2006).

Critical Thinking. In addition to the WNSLAE results reported above, measures of critical thinking have also been positively associated with academic challenge, amount of reading and writing (a component of academic challenge), and institutional emphasis on academic support and promoting contact among students with different backgrounds (Carini, Kuh, & Klein, 2006). For first-year students, the number of short papers written and frequency of coming to class having completed assignments seems to have the most positive effect on critical thinking gains, while seniors benefited most from integrating ideas from different courses to complete assignments and receiving prompt feedback from faculty members.

NSSE's measures of enriching educational experiences include interactions with diverse others, both with respect to student behavior and environmental emphasis. Loes, Pascarella and Umbach (2012) used WNSLAE data to investigate the relation-

ship between diversity experiences and the development of critical thinking skills. While exposure to diversity experiences in the classroom and interactions with diverse others on campus had no overall effect on critical thinking, meaningful conditional effects were detected. With statistical controls for a host of student and institutional characteristics, the analysis showed that White students evidenced significant, positive benefits of diversity activities on critical thinking while the relationship was not significant for students of color. In addition, students who entered college with lower levels of precollege achievement gained more in critical thinking as a result of diversity activities, compared with their counterparts with higher test scores. These results suggest that there are important conditional influences on the development of critical thinking skills that vary with a student's background (Loes et al., 2012).

GRE Scores. Graduate Record Examination scores have also been positively linked to student engagement, particularly with the amount of reading and writing. What's more, compensatory effects were also evident in these models. Other things equal, at increasing levels of certain forms of engagement (e.g., reading and writing, course emphasis on higher-order thinking, and integrating diversity into coursework), lower-ability students realized a greater increment in GRE scores than otherwise similar students with higher levels of entering ability (Carini et al., 2006).

Moral Reasoning. In another analysis of WNSLAE data, Mayhew, Seifert, Pascarella, Nelson Laird and Blaich (2012) found that NSSE's deep approaches to learning scale had modest positive effects on moral reasoning for first-year students, even after controlling for precollege moral reasoning. The effect was strongest for the integrative learning subscale, which includes items related to incorporating diverse perspectives in class assignments, integrating information from multiple sources in writing assignments and projects, combining ideas from different courses in assignments or class discussions, and discussing ideas from courses or readings with faculty members or others.

Need for Cognition. Analyses of WNSLAE data found that interactions with faculty outside of the classroom and having meaningful discussions with diverse peers positively affected first-year students' growth in *need for cognition*—a desire to engage in cognitive activities—net of background characteristics such as SES and first-generation status (Padgett et al., 2010).

Studying the Effects of a Liberal Arts Education. Wabash study researchers investigated the validity of a scale measuring core liberal arts experiences—which included a number of student engagement measures, such as academic effort and challenge, student-faculty contact, high expectations on the part of faculty, active learning, collaborative learning, diverse interactions, and environmental support—as it related to six key outcomes espoused by advocates for liberal arts education. The researchers found that after taking student and institutional characteristics into account, liberal arts experiences had a positive effect on four of six outcomes, namely, intercultural effectiveness, inclination to inquire and lifelong learning, psychological well-being, and socially responsible leadership (Seifert et al., 2008).

Typological Research on Student Engagement

Hu and McCormick (2012) used NSSE data from 14 four-year WNSLAE institutions to develop a cluster analytic typology of student types based on the pattern of first-year students' engagement as indicated by the five NSSE benchmarks and then conducted a multivariate analysis of the relationship between student type and a range of outcomes including first-year GPA, self-reported gains over the first year, first-year gains on four of the objective WNSLAE assessments, and persistence to the second year. The analysis produced seven types representing different engagement patterns, with each group representing from 10 to 17% of the sample. For the present discussion, two polar opposite groups are of interest: the "Disengaged," representing 13% of the sample, and "Maximizers," who accounted for 10%. The average member of the Disengaged was well below the mean on all five benchmarks, with z-scores ranging from −.87 to −1.39. Maximizers, by contrast, were on average at least a full standard deviation *above* the mean on all five benchmarks (average z-scores ranging from 1.04 to 1.76). Controlling for background characteristics (gender, race/ethnicity, parents' education, and entrance examination score), major or intended major, and institution attended, membership in the Disengaged (relative to a third group not discussed here) was significantly and negatively related to the total gain on the four assessments, total self-reported gains, and GPA. Being a Maximizer (relative to the same third group) was significantly and positively related to total gain on the four assessments, total self-reported gains, and persistence to the second year. This exploratory study suggests promise in the application of typological methods to understanding student engagement and its relationship to success, especially in view of the fact that most of the variability in student engagement (as represented by the NSSE benchmarks) is between students rather than between institutions (NSSE, 2008).

Engagement data can not only be used to identify student types, they can also be used to construct a typology of institutions based on students' patterns of engagement. Using institution-level NSSE data for seniors, Pike and Kuh (2005b) applied Q-factor analysis and found seven institutional types that accounted for 80% of the variance between institutions. These types, partially aligned with Basic Carnegie Classification, were grouped according to their student engagement profiles. The types were given descriptive names such as "intellectually stimulating," "interpersonally supportive," and "high-tech, low-touch." No institution was found to be uniformly high or low on the 12 engagement measures used in the study. Rather, the engagement patterns suggested that most institutions had something to offer. The finding that the types were somewhat related to the Carnegie system led the authors to recommend that the typology be used as a supplement to the classification rather than as a substitute (Pike & Kuh, 2005b).

Student Engagement in Community Colleges

In other research, community college students were much more likely to be engaged in the classroom through activities designed by the instructor than to be engaged outside of the classroom in college-sponsored extracurricular activities. For this

reason, CCSSE researchers urge community colleges to emphasize intentional design of learning activities through syllabi, in- and out-of-class assignments, and other engagement-focused educational experiences (McClenney, 2007).

Another key finding from CCSSE includes an "effort-outcome gap" for certain students of color and students who are not fully academically prepared for college work. While these students were at a higher risk of dropping out, results showed that those who persisted were *more* engaged than their peers, suggesting that more effort may be needed to produce the same desired outcomes, perhaps to overcome disproportionately greater academic and institutional barriers for this population (Greene, Marti, & McClenney, 2007). This finding was also seen as indirect evidence of the positive relationship between engagement and full-year persistence: because CCSSE is administered in the spring, a "survivor effect" may be biasing the sample—eligibility to complete the survey requires that a student must still be enrolled in the spring.[11]

Investigating Trends in Institution-Level Measures of Student Engagement

In her contribution to a volume on the gap between research and practice in higher education, K. Patricia Cross (2000) wrote: "Evidence is a familiar and revered term to researchers, yet there is precious little evidence collected and disseminated by researchers to demonstrate that they are making a difference in educational practice" (p. 73). Given that a core purpose behind NSSE's founding was to inform institutional improvement, it is appropriate to interrogate the longitudinal data for evidence of impact: are there signs of improvement? NSSE's 10th anniversary in 2009 provided the occasion for initial investigation of this question. After identifying more than 200 institutions that had administered the survey at least four times between 2004 and 2009 (a period during which no major changes had been made to the survey or benchmarks) and that satisfied minimum response rate and sample size criteria, an analysis was undertaken to identify statistically significant trends in benchmark scores and in the proportion of students participating in high-impact practices (see Kuh, 2008), analyzing first-year and senior data separately (NSSE, 2009a). The results indicated that 41% of institutions in the first-year analysis and 28% in the senior-year analysis showed a positive trend on at least one measure, while only a handful showed negative trends. Positive trends were detected across categories of institutional size, control, and Basic Carnegie Classification. For about one in eight institutions in each group, the effect size associated with the change between end points was at least .5 (NSSE, 2009a). Based on the results of this initial analysis, a more ambitious study was launched with support from the Spencer Foundation, using a wider range of measures and time frames, with a research design incorporating qualitative inquiry into the circumstances underlying the observed changes. Although that study is ongoing, some early findings bear mention. The quantitative analysis examined a diverse sample of 534 institutions that administered NSSE at least four times between 2001 and 2009 and that satisfied data quality

criteria (sampling error and response rate or sample size) for each administration. Two-thirds of the sample had at least five administrations, and one-quarter had seven or more. The quantitative analysis of first-year measures found detectable positive trends on at least one measure for 322 institutions and for 270 on the senior-year measures. Corresponding figures for negative trends were 44 and 38, respectively. In other words, positive trends outnumbered negative ones by a seven to one margin, strongly suggesting that the analysis is not improperly attributing meaning to chance variation (McCormick, Kinzie, & Korkmaz, 2011).

The second phase of research involved the analysis of questionnaires returned by institutional contacts at 61 institutions (out of 110 invited). In the vast majority of cases, respondents attributed the positive trends to intentional change efforts at the selected institutions.[12] When asked a closed-ended question about motivators for the changes, the three most commonly selected choices were, in descending order, "institutional commitment to improving undergraduate education," "data that revealed concerns about undergraduate education," and "faculty or staff interest in improving undergraduate education." By contrast, few respondents indicated "national calls for accountability" or "mandates from governing, state, or legislative boards" (McCormick et al., 2011).

Five propositions emerge from this ongoing research. First, the fact that more positive trends were detected for first-year students than seniors suggests one or perhaps both of the following: that institutional concern with retention may be directing greater attention to interventions to improve the first-year experience and that gains in student engagement may be easier to achieve in the first-year than in the senior-year experience. Second, the fact that more trends were detected for active and collaborative learning than for any other measure suggests that institutions and faculty may have particularly prioritized their curricula to promote these learning activities. (It is also possible that these findings are partly attributable to broader changes in pedagogy preferences, independent of strategic action by institutions.) Third, because there were many instances of positive trends on the same measure for both first-year students and seniors, it appears be that some institutions are targeting a specific change effort broadly, across the undergraduate experience. Fourth, the fact that positive trends were detected at all types of institutions—not just small, private, residential colleges—indicates that sustained positive change is not constrained by structural features. Finally, change appears to have come about because key actors at the institution were intrinsically motivated to improve, rather than to meet compliance standards or to salve external calls for accountability.

Other Findings of Note

Each year, NSSE compiles data and key findings in a widely released report called *Annual Results.* These reports introduce new and useful engagement concepts and add texture and nuance to our understanding of the undergraduate experience. We offer below a brief selection of such findings not already described, each of which

offers opportunities for further investigation, both by researchers and institutional personnel charged with educational improvement.

Preparation for class falls well short of the conventional standard. NSSE has consistently found a large gap between the amount of time students spend preparing for class and the conventional expectation of 2 hours of preparation for each hour of class time. The average student spends about half as much time preparing for class (NSSE, 2001, 2011).[13] But the aggregate figure masks considerable variation by discipline. For example, full-time seniors in engineering average nearly 20 hours per week preparing for class, 5 hours more than their peers in the social sciences and business. Viewed another way, about 40% of full-time seniors in engineering spend at least 20 hours preparing for class, compared to about one-quarter of those in education and social sciences and one-fifth of business majors (NSSE, 2011). Interestingly, evidence from the Faculty Survey of Student Engagement suggests that faculty themselves no longer adhere to the conventional expectation: the average study time figures generally fall only about 1 hour shy of the amount that faculty members in these disciplines report they expect of the typical upper-division student taught (the exception being social science faculty, who expect 4 hours more than their senior majors report) (NSSE, 2011).

Despite the apparent gap between convention and practice with respect to study time, about one in five students reports "often" or "very often" coming to class without having completed readings or assignments (NSSE, 2008). And while they commit more time to studying than their peers, engineering majors are more likely than others to report frequently coming to class without having completed all assignments (NSSE, 2011). Taken together, these findings raise concerns about a breakdown of shared responsibility for learning—students failing to take full advantage of their educational opportunities and faculty members allowing students to get by with too little effort.

Women's colleges are more engaging. Both first-year and senior women attending women's colleges experience more challenging coursework, learn in more active and collaborative ways, have more frequent interactions with faculty, and have more diversity-related experiences than women at other types of institutions (NSSE, 2003).

As the share of departments educating both undergraduates and graduate students goes up, undergraduate student engagement goes down. McCormick, Pike, Kuh and Chen (2009) examined the relationship between the new Carnegie classifications and measures of student engagement, as well as self-reported learning gains. In a hierarchical analysis of student engagement as measured by the NSSE benchmarks, the study found a consistent negative relationship between "graduate coexistence" and all five benchmark scores, net of a host of student and institutional characteristics, including institution size and control, residential character, and aggregate proportion of graduate/professional students.

Deep learning activities are associated with a wide range of benefits. Students who engage more in deep learning activities devote more time to class preparation, participate more in cocurricular activities, perceive greater educational and personal gains from college, perceive their campus to be more supportive, and tend to be more satisfied overall with college (NSSE, 2004).

Distance learners are, on average, engaged students. Students who take all of their courses online tend to be older, attend part time, work full time, and are more likely to care for dependents. Consistent with that profile, they participate less in collaborative learning activities. However, these students also participate more in academically challenging coursework, engage in more deep learning activities, and reported greater developmental gains from college (NSSE, 2006, 2008).

Student engagement varies more within colleges and universities than between them. Student experiences within any given campus are known to vary widely, from the most highly engaged, top performing student who maximizes as many learning opportunities as time allows, to others who do the minimum to get by, choose not to interact with faculty or others on campus, and fail to take advantage of opportunities to enrich their undergraduate years. This variation among students within the college environment is often overlooked in favor of institutional comparisons that compare the theoretical average student at one school with the average student at peer institutions. The focus on institutional averages is reinforced by the contemporary accountability discourse, college rankings, and narratives of institutional distinctiveness promulgated by institutional leaders, admissions staff, and alumni. Yet analyses of key engagement measures have consistently shown that over 90% of the variation in individual-level engagement, as measured by NSSE benchmarks, occurs between *students,* not between institutions (Kuh, 2003). An implication of this finding is that even schools with high average levels of engagement have a sizeable portion of under-engaged students, and rankings may be a poor predictor of the quality of any given student's experience (NSSE, 2008).

Linking Research to Practice

Among Pascarella and Terenzini's (2005) general conclusions is the following: "[I]f, as it appears, individual effort or engagement is the critical determinant in the impact of college, then it is important to focus on the ways in which an institution can shape its academic, interpersonal, and extracurricular offerings to encourage student engagement" (p. 602). In advocating assessment of the college environment, Pace (1980) and Astin (1991) sought to influence changes in institutional practice, and this purpose endures in the contemporary application of their ideas. When NSSE and CCSSE emerged in the early twenty-first century, the projects sought to enrich the national discourse about college quality by shifting the conversation away from reputation, resources, and the preparation of entering students in favor of the student experience, and specifically activities bearing on teaching and learning and empirically linked to desired outcomes. To foster this shift, the projects asserted the practical aim of providing administrators and faculty with tools for examining the prevalence of effective educational practices on their campuses and among different student populations. The survey results provide participating institutions diagnostic information about student behaviors and institutional factors that can be influenced in practice and that an array of educators can address. The primary goal of NSSE and CCSSE, then, is to inform

and foster improvement in undergraduate education. We now turn our focus on the choices institutions can make based on student engagement results.

With evidence from assessments of student engagement, practitioners concerned about student success gain instructive insights about their students' educational experiences and how they may be improved. For example, survey results can reveal to faculty members the extent to which students believe courses emphasize memorization or faculty provide receive timely feedback. Simple data points like these can catalyze discussions about course assignments and learning assessments or about expectations for feedback (Kuh, Kinzie, Schuh, Whitt, & Associates, 2010). Such information can help institutions identify strengths in current practice and also pinpoint where investment in resources and programs may be necessary. Indeed, by disaggregating results by school or by major, pockets of exemplary performance can be identified, celebrated, and elevated as models, just as areas in need of improvement can be identified.

Although student engagement involves both what the student does and how faculty and other institutional personnel establish the conditions for engagement, concern for improvement necessitates that a greater share of responsibility for increasing student engagement falls to institutional actors. The framework for considering student engagement results is not about predicting or pinpointing individual students' motivation and behaviors. Rather, results inform the institution about the extent to which it is deploying resources to promote student engagement and success. In fact, student engagement places significant emphasis on the responsibility of the institution. Student engagement results help colleges and universities hold *themselves* accountable for a quality undergraduate experience (McCormick, 2009).

Institutions' responsibility for student engagement was further emphasized in Harper and Quaye's (2009) *Student Engagement in Higher Education.* This volume summarized research and practice on the needs of diverse students, exposed worrisome engagement trends among these populations, and offered practical guidance for institutions willing to accept responsibility for the engagement of all students. One of the most salient points is the importance of placing the onus for student engagement on faculty, staff, and administrators and for attending to diverse students' needs. Moreover, the volume's depictions of the challenge of student engagement for diverse student populations and research identifying differences in student engagement among students at minority-serving institutions demonstrate the importance of examining within-institution and between-group variations in engagement (Bridges, Kinzie, Nelson Laird, & Kuh, 2008; Nelson Laird, Bridges, Morelon-Quainoo, Williams, & Salinas Holmes, 2007; Nelson Laird & Niskodé-Dossett, 2010).

From Data to Action: Institutional Use of Student Engagement Results

Data-informed improvement initiatives have the potential to increase educational effectiveness. As tools to inform institutional improvement initiatives, NSSE and CCSSE have from the outset documented how institutions use results to guide

improvement efforts. This section illustrates how results have been used by colleges and universities. The emphasis of student engagement on behavior and on effective educational practice, rather than values or satisfaction, offers educators the ability to assess quality in a concrete way and to do so in a way that focuses attention on a range of initiatives, including accreditation self-studies, benchmarking and strategic planning, faculty and staff development, general education reform, retention efforts, state system performance reviews, and more.

NSSE and CCSSE regularly solicit information about institutional use of student engagement results and disseminate examples in reports to institutions, in annual reports, and on their Web sites. More than 500 institutional accounts of NSSE data use have also been documented and are summarized in a searchable online database (see nsse.iub.edu/html/using_nsse_db/).

NSSE recently introduced a series titled *Lessons from the Field* (NSSE, 2009b, 2012) as another vehicle for disseminating what colleges and universities are doing with their results. The two volumes to date capture the growing body of collective wisdom and emerging lessons about the use of student engagement results to advance educational quality. The examples featured represent a range of institutions with respect to size, Carnegie type, region, locale, and control. Topics include assessing quality in the first-year experience, analyzing data to understand persistence to the second year, triangulating NSSE results with advising surveys to improve the undergraduate experience, and efforts to understand differences by academic department and to modify practices in particular areas. These accounts serve as instructive and inspirational examples for institutions seeking to enhance undergraduate teaching and learning and suggest broader lessons about data-informed improvement initiatives in higher education. The following brief examples illustrate institutional uses of NSSE results:

Kalamazoo College's NSSE results reveal consistently high results on items that reflect the hallmarks of the institution's academic and experiential programs. However, when a downward trend was noticed on a particular cluster of NSSE items, college leaders planned specific action and sought more information through campus-wide discussions. For example, student focus groups were conducted to better understand students' perceptions of elements of the supportive campus environment measure (which includes quality of relationships with students, with faculty, and with administrative staff, as well as perceived institutional emphasis on support). Findings from both NSSE and the focus groups informed several policy changes and influenced how student space is designed on campus, including a major renovation of the student center. This illustrates the power of student engagement data to shine a light on the student experience.

Brigham Young University (BYU) participates in NSSE annually to gain a better understanding of student engagement across various departments and the extent to which BYU's educational goals are being realized. When an academic department comes up for review, the Office of Institutional Assessment and Analysis prepares custom reports detailing engagement at the academic unit level for each department (sample size permitting), along with comparisons to other students at BYU and at

peer institutions. This allows each department to assess progress on associated educational goals in relation to student engagement and share their custom reports during retreats where they discuss what the results reveal about their students and the curriculum. Units have made good use of NSSE data on self-reported gains and on the prevalence of student research with faculty members. In addition, BYU's multiyear participation facilitates the mapping of NSSE data to the university's annual senior survey and alumni questionnaire. A repository of multiyear data provides a rich resource for some academic units to identify trends over time and to align their NSSE results with accreditation standards.

The State University of New York at Potsdam (SUNY Potsdam) used its results from nine NSSE administrations to support its 2010 self-study for reaffirmation by the Middle States Commission on Higher Education (MSCHE). Specific NSSE items were aligned with MSCHE standards to report levels of student participation in undergraduate research and service learning as well as to report on student interactions with faculty and administrative staff. NSSE results also informed reviews of general education and academic advising. SUNY Potsdam has made great efforts to encourage data use at the department level, as well. NSSE results are featured on the institution's Web site, and the use of NSSE data has been promoted across campus. Department chairs disseminate disaggregated results in breakout reports and put data into the hands of faculty to help improve pedagogical practice.

These accounts and numerous other examples demonstrate that many institutions go well beyond merely participating in NSSE and CCSSE and warehousing results to making productive use of student engagement data to improve the undergraduate experience. When various justifications for not acting on results (e.g., concerns about data quality, discomfort with or rejection of unflattering results, and the desire for corroborating data) have been exhausted and after observing consistent results over time or from multiple sources, it is time to take action. Understanding how colleges and universities use results and achieve improvements in undergraduate education is important to advancing systemic improvement in higher education.

Institutional Uses as Data

The rich collection of institutional use examples collected over time provides an occasion to analyze across campus accounts and consider broader lessons about effective approaches to advancing data use to improve undergraduate education. Analyses of institutional use across the 43 institutional accounts featured in the two volumes of *Lessons from the Field* led to a set of crosscutting conclusions and recommendations about ways to maximize the use and impact of student engagement results. One recommendation for effective data use includes creating a campus committee, team, or task force to oversee data collection, develop communication strategies, review and interpret results, and serve as a liaison to units to support data use. Another conclusion involves the importance of validating findings by linking engagement results to other data sources to increase confidence in results for use in decision-making. The recommendations about effective ways to use survey results

to initiate action to assess and improve undergraduate education provide practical suggestions for colleges and universities as well as broader insights about fostering data use in higher education.

Additional research on the use of engagement data in assessment, accreditation and planning, and institutional improvement demonstrates practical applications of student engagement findings. Banta, Pike and Hansen (2009) drew on their experiences at several different institutions to illustrate how student engagement results can be used to inform planning, assessment, and improvement. In their examples, student engagement results played an important role through various phases of the cyclical model of institutional planning (goal setting), implementation of plans, assessment of outcomes, use of findings to improve processes, and adjustment of plans to reflect progress (or lack thereof). For example, to address a campus goal of "providing experiences that increase student understanding of other cultures," the institution reviewed student engagement results related to diversity experiences to understand how students experience the learning opportunities provided. The authors concluded that student engagement results can be effectively used as one source of evidence to develop data-driven plans to improve educational experiences and that data had greater impact when campus leaders fully incorporate results in the planning, assessment, and improvement cycle.

Institutional accounts of student engagement data use also demonstrate how results have helped induce positive changes in teaching, learning, and other institutional practices and show how faculty, student affairs professionals, academic administrators, and others have worked collaboratively to use results to inform policies and practices that foster higher levels of student engagement (Kinzie & Pennipede, 2009). Analyzing accounts of use from nearly 50 institutions led to the creation of a three-step plan for taking action on student engagement results: planning action before results are delivered, examining and sharing results, and moving beyond reports by conducting additional analyses and data collection. Kinzie and Pennipede (2009) illustrate each step and subtask with institutional examples and conclude with six recommendations for turning engagement results into action:

1. Find relevancy and entice with results.
2. Continuously disseminate data in small doses.
3. Appoint student engagement ambassadors.
4. Connect student engagement results to the study of real campus problems.
5. Infuse data into continuous improvement processes.
6. Dig deeper into results.

A comprehensive plan for acting on student engagement results is essential to using results to inform campus practice. In addition, initial action on results need not be on an institutional scale to be effective and result in improvement. Instead, improvement may begin in small ways and accumulate over time, becoming the foundation for larger more encompassing reform efforts.

The foregoing discussion provides examples of how colleges and universities are making use of student engagement data. For the most part, however, these examples have been collected and disseminated by NSSE itself, or by those with formal

responsibility for assessment. In the present accountability climate, with renewed calls from accreditors and others to take assessment seriously, the higher education research community has an unprecedented opportunity to undertake systematic investigation into how data are used—or not—to advance both theory and practice. Theories of organizational learning, leadership, and organizational culture are readily applicable.

Research and Practice Initiatives

Since the beginning of the NSSE project, an important aim was to conduct research on and document effective educational practice, to do so in partnership with a variety of organizations, and to apply results to improve teaching and learning and student success. These projects had practical objectives: their findings focused on understanding assessment and improvement initiatives in context and identifying models and lessons for other campuses. The summaries below briefly highlight the purpose and outcomes of these research projects and their contributions to practice.

Developing Models of Effective Practice. What does a college or university with high levels of student engagement look like? What practices and policies are in place at institutions with retention and graduation rates and levels of student engagement that exceed predictions based on institution and student characteristics? A time-honored approach to improving organizational effectiveness is the identification and adaptation of qualities that characterize high-performing organizations (e.g., Collins, 2001; Peters & Waterman, 1982). The Documenting Effective Educational Practice (DEEP) project employed this approach by systematically examining the conditions that account for student success and highlighting practices associated with high levels of student engagement. NSSE and the American Association for Higher Education (AAHE) collaborated on Project DEEP to examine the daily activities of educationally effective colleges and universities, defined as those with higher-than-predicted graduation rates and higher-than-predicted scores on NSSE's five benchmarks of effective educational practice. Case studies of 20 high-performing colleges and universities of various sizes and types provided rich examples of what they do to promote student success.

Findings from the project, reported in *Student Success in College* (Kuh et al., 2010), included the identification of six conditions for student success and detailed explication of practices associated with the NSSE benchmarks. For example, DEEP institutions have effective policies and practices for working with students of differing abilities and aspirations, and that signal the value attached to high-quality undergraduate teaching, diversity, and support for all students. They also clearly communicate high standards and hold students to them, provide timely feedback, and encourage students to actively engage with course content, faculty and peers, inside and outside the classroom. When these activities complement the institution's "living mission" and values, these conditions create powerful learning environments

that lead to desirable learning outcomes. These institutions were pervaded by what the authors called a "positive restlessness" around student learning and success. A follow-up study conducted with the institutions 5 years later revealed that the conditions for success still held and that certain practices such as an unshakeable focus on student learning and an ethos of continuous improvement were critical to sustaining effective practice (Kuh, Kinzie, Schuh, & Whitt, 2011).

Project DEEP demonstrated that educationally effective colleges and universities craft policies and practices that channel students' energies to activities that matter to student learning. To support colleges and universities in their efforts to develop engaging experiences, a resource featuring a self-guided framework for conducting a comprehensive, systematic, institution-wide analysis was created to help leaders and staff at other institutions examine the six properties and conditions common to high-performing schools, as well as NSSE's five benchmarks of effective educational practice in their own context (Kuh, Kinzie, Schuh & Whitt, 2005). Project DEEP findings were also made more accessible for practice through a series of four-page policy briefs targeted to a wide range of audiences including university administrators and leaders, faculty, department chairs, students, and the general public, containing suggestions for promoting student success informed by project findings (see nsse.iub.edu/links/practice_briefs). Findings from this extensive study of conditions for student engagement and success provide research-based models for fostering effective educational practice. Most importantly, the documentation of effective practices and institutional policies provides instructive models for institutions striving to improve educational quality.

Exploring Student Engagement at Minority-Serving Institutions (*MSIs*). Little systematic attention has been given to examining the student experience and using results for institutional improvement at MSIs. The goal of the Building Engagement and Attainment for Minority Students (BEAMS) Project was to better understand the unique context for collecting and using student engagement data and what fosters institutional improvement at MSIs. This 5-year initiative entailed more than a hundred MSIs using evidence from NSSE and other sources to analyze the scope and character of students' engagement in their learning. Results included the development and implementation of action plans to improve engagement, learning, persistence, and success and documentation of the approaches that proved effective in advancing data use in MSIs. Results of the study were published in the monograph, *Increasing Student Success at Minority-Serving Institutions: Findings from the BEAMS Project* (Del Rios & Leegwater, 2008), and in a series of 10 topical briefs based on BEAMS project outcomes on topics such as Increasing Student Engagement Through Faculty Development, Leveraging Technology in Campus Change Initiatives, and Purposeful Co-Curricular Activities Designed to Increase Engagement (see www.ihep.org/programs/BEAMS.cfm).

As part of this work, Bridges, Cambridge, Kuh and Leegwater (2005) identified practices and policies for using student engagement data to promote student success at MSIs and, in particular, challenges associated with administering national surveys. An example of data use at the University of Texas at El Paso (UTEP), a Hispanic-serving institution (HSI), illustrates how one campus used student engagement data to identify obstacles to graduation. UTEP's NSSE data indicated that although students were engaged at reasonably high levels in the first year of college

and persistence rates from the first to second year were relatively good, students became less satisfied with their studies and the campus environment as they progressed. A review of senior NSSE results combined with additional information from senior surveys raised more concerns about the quality of the student experience, prompting UTEP to invite students to help administrators and faculty understand and interpret the results and to provide suggestions for what UTEP could do to improve the quality of undergraduate education. The institutional accounts in this study offer models of evidence-based decision-making that are useful to all colleges and universities. Bridges et al. (2008) extended BEAMS project activities by examining student engagement results for baccalaureate degree-seeking students at BEAMS campuses to estimate the impact of project activities and draw broader implications for data-informed practice.

Descriptions of engagement and educational effectiveness at HBCUs and HSIs demonstrated the strong asset-based philosophy for student learning operating at these institutions and the structure of integrated and redundant opportunities for students to engage with their peers in important educational practices including active and collaborative learning and service-learning experiences. In addition, HBCUs appear to connect students and faculty in ways that increase students' level of engagement and commitment to success, while HSIs effectively connect students to peers to promote success. This tapestry of tradition, clarity of mission (especially for many HBCUs), talent development philosophy, and supportive campus climate helps these institutions overcome sometimes considerable financial and physical plant disadvantages to foster minority student success.

Studying Evidence-Based Improvement. Despite long-standing calls for higher education to embrace assessment and use results to inform educational improvement, relatively little is known about evidence-based improvement in colleges and universities. How do institutions use assessment data to identify problems, formulate improvement strategies, engage important stakeholders in the enterprise, and implement positive change? Described in the previous section, the Spencer Foundation-funded study, *Learning to Improve: A Study of Evidence-Based Improvement in Higher Education,* is investigating institutions with positive trends on NSSE measures to inquire into processes of institutional change. Following the initial quantitative analysis and questionnaire research described above, in-depth qualitative case study methods are being used to examine selected institutions with improved scores to document the impetus for and facilitators of improvement efforts and, more specifically, how campuses enacted change. By describing improvement processes and identifying supporting and inhibiting factors, lessons about what works in institutional change and about the development of a culture of institutional improvement will contribute to the literature on organizational change in higher education.

Research Initiatives Supported by Higher Education Organizations

The potential for using student engagement results to influence educational practice has also been of interest to a variety of higher education organizations and external research groups. Collaborators that have employed student engagement results in

their research and evidence-based practice work include the Council of Independent Colleges (CIC), the Association of American Colleges and Universities (AAC&U), the Center of Inquiry in the Liberal Arts at Wabash College, and the Teagle Foundation. Several such initiatives are described below.

Council of Independent Colleges (*CIC*) *Projects.* As the national service organization for small- and mid-sized independent colleges and universities, CIC has advocated the importance of using data about the quality of the undergraduate experience to demonstrate the value of an independent college education and to foster improvement initiatives in the sector. CIC's "Making the Case" series employs NSSE results along with other data sources to demonstrate the educational effectiveness of CIC institutions on such topics as level of academic challenge, student-faculty interaction, and culminating senior experiences (Council of Independent Colleges [CIC], 2011). Another CIC initiative involved continued work with a consortium of institutions using the Collegiate Learning Assessment (CLA) combined with other assessment information to understand educational and programmatic features associated with students' analytic reasoning, critical thinking, and writing gains. A large number of consortium participants elected to use NSSE as part of this work, which has produced two volumes of in-depth analyses from more than 40 institutions documenting their approaches to using student learning and engagement results (as well as results of other assessments) and important lessons from the experience. The collaborative work of the consortium member institutions has helped institutions create a culture of assessment that informs evidence-based faculty deliberation about student learning (CIC, 2008; Paris, 2011). CIC has also coordinated additional work funded by the Teagle Foundation focused on improving undergraduate student learning. One grant supports "Engaging Evidence: Programs for Improving Student Learning," a 2-year project that brings together colleges and universities that have used the results of student learning outcomes assessment to increase both how much and how well students learn. CIC's coordinated work has influenced data use and improvement initiatives at hundreds of independent colleges and universities.

Center of Inquiry in the Liberal Arts (*CILA*) *at Wabash College Projects*. From 2006 to 2009, the Center of Inquiry led the Wabash National Study of Liberal Arts Education (WNSLAE, described earlier), a large-scale, longitudinal study to investigate factors that affect liberal arts education outcomes. NSSE was one of several instruments employed to help colleges and universities learn what teaching practices, programs, and institutional structures support liberal arts education and to develop robust methods of assessing liberal arts education. Although WNSLAE is a research project, it also had practical institutional improvement aims in that participating institutions were expected to act on their findings. Reports regarding institutional use of student learning and engagement data (Blaich & Wise, 2010, 2011a) documented the challenges that participating institutions faced in identifying and implementing changes in response to data and also identified five practical steps that campuses should consider implementing as they develop assessment projects to increase the likelihood that they will benefit student learning. In 2010, the Center of Inquiry adapted aspects of the original project to further the study of the formative

use of evidence to promote institutional change. Nearly 50 colleges and universities are continuing to collect and use student engagement results along with other measures of the student experience and to participate in a series of structured site visits, meetings, and workshops; to learn to use evidence to identify an area of student learning or experience that they wish to improve; and then to create, implement, and assess changes designed to improve those areas. The project implements a deliberative process for using evidence that an institution can build on for improvements in student learning. While each institution will focus on improving areas relevant to that institution, faculty, staff, and administrators from these institutions will collaborate during the course of the project as a community of practice, sharing information, approaches, problem-solving strategies, and lessons learned.

Research projects with a strong emphasis on application to effective educational practice in colleges and universities have been a major focus of the NSSE and CCSSE projects from the outset. As the studies described in this section illustrate, much can be learned about the challenges of putting assessment results to work to improve the quality of undergraduate education. Accumulated information about data use from NSSE, CCSSE, CIC, and WNSLAE suggests that many colleges and universities are collecting data about the quality of the undergraduate experience, and a good number are putting these data to use in their efforts to assess and improve undergraduate education. However, this work is challenging and requires a substantial amount of structured intervention and support to induce systematic, sustained study and action. Conducting this work in partnership with other organizations on projects to advance the study of student engagement and to apply results to improve teaching and learning and student success has helped to advance the use of research-informed interventions in colleges and universities. Indeed, student engagement rests on a rich foundation of empirical research on practices related to undergraduate student learning and development. This work is furthered when colleges and universities apply data to understand real campus problems, inform institutional improvement efforts, and monitor the results. Documenting the approaches to and achievements of research and practice fosters greater understanding of what it takes to improve college quality.

Assessing Student Engagement: Current Status, Challenges, and the Agenda Going Forward

Measured against strict scholarly standards of theory construction, student engagement is untidy. It lacks precision and parsimony. It encompasses behaviors, perceptions, and environmental factors. It merges related yet distinct theoretical traditions with a collection of research-informed good practices. But student engagement was not conceived to advance theory, or even to generate testable propositions (though it can be used for those purposes). Rather, the focus on student engagement emerged from the concerns of practice: asserting a new definition of college quality sharply focused on teaching and learning while providing colleges and

universities with measures of process and institutional environment that can inform the improvement of undergraduate education. Because student engagement was explicitly built on a solid foundation of research findings, it represents a noteworthy example of bringing research to bear on pressing concerns of practice. Student engagement integrates what has been learned about quality of student effort, student involvement, and principles of good practice in undergraduate education into a broad framework for assessing quality and guiding its improvement. In this regard, it represents precisely what some leading scholars have argued has been lacking in higher education research (Altbach, 1998; Keller, 1985; Terenzini, 1996). Furthermore, research into institutions with positive trends on measures of student engagement provides ample existence proofs that improvement is possible and that it is not confined to certain institutional types (McCormick et al., 2011). But this history notwithstanding, there are opportunities to deepen and enrich our understanding of student engagement and to develop and refine its theoretical underpinnings while enhancing its relevance to practice.

Toward More Sophisticated Understanding: Differentiation and Granularity

Like many other aspects of the college experience, student engagement varies among students within an institution far more than it varies between institutions. Despite the strong appeal of investigating institutional differences, this within-institution variability represents the low-hanging fruit for advancing student engagement research. We know that patterns of engagement vary with major field of study (Brint, Cantwell, & Hanneman, 2008; NSSE, 2008, 2011), and recent typological investigations have shown that distinctive patterns of engagement exist on campuses, and that these patterns correspond to differences in educational outcomes (Hu & McCormick, 2012). Harper and Quaye (2009) remind us of the imperative to understand how student engagement operates among diverse populations, all of whose success is vital to the future of higher education and the wider society. The long research tradition that undergirds student engagement is largely based on full-time, traditional college-aged, predominantly White, male, residential students. This raises legitimate questions about whether those findings apply to student populations that differ from the historical norm (Bensimon, 2007; Harper & Quaye, 2009). Although student engagement is grounded in decades of research on what matters to student learning and development, it does not imply a uniform conception of the undergraduate experience. Indeed, research on student engagement has already documented differential effects based on student background, with engagement showing modestly stronger positive effects for both underprepared and traditionally underrepresented students (Kuh et al., 2008). There is a need to understand these differential effects and also to investigate how student engagement may manifest itself differently for populations other than those that predominate in the foundational research on college impact. A promising avenue for future research, then, is to

understand variation in student engagement not just with regard to academic major but also for other patterns of affiliation and identity. Among other possibilities, this represents an opportunity to reinvigorate inquiry into the role of peer groups and microenvironments on shaping student experiences and outcomes.

Another opportunity is to go deep. Our understanding of student engagement is largely based on large-scale survey research using NSSE and CCSSE, instruments designed for institution-level assessment. Surveys are inherently blunt instruments characterized by a number of compromises with regard to content area coverage and specificity. For example, both NSSE and CCSSE ask students to describe their educational experiences over the course of a full year, which of necessity requires them to summarize across a range of disparate experiences. The surveys also ask a limited number of questions about a variety of experiences and activities—they go wide but not deep. Thus another avenue of research and development involves manipulating the means and granularity of student engagement research. One version of this work might investigate engagement in the context of specific courses. Some suggestive work has begun with the field-initiated Classroom Survey of Student Engagement (CLASSE) (Ouimet & Smallwood, 2005). CLASSE seeks to apply student engagement concepts at the classroom level, in a faculty development framework. Similarly, Barkley's work (2010) represents an effort to translate the ideas of student engagement into the classroom and the work of faculty members. These offer possibilities for investigating how engagement works in particular classroom settings as well as the factors that lead faculty members to undertake to enhance engagement, how they go about it, and what support may be required. Another manipulation would single out a narrow subset of student engagement topics for detailed investigation, whether using survey techniques, qualitative methods, or a combination of the two.

The focus on student engagement has led to a particular interest in so-called high-impact practices, a diverse set of experiences that stretch and challenge students in a range of ways and that correspond to desirable outcomes (Kuh, 2008; NSSE, 2007). Examples of high-impact practices include learning communities, service learning, internships and field placements, undergraduate research, and culminating senior experiences such as capstone courses and projects. But each of these is subject to considerable variation in the implementation process, and there is a need to better understand the role of implementation in ensuring the effectiveness of these practices. While some of these practices (e.g., learning communities and service learning) have been extensively studied, far more attention is needed to questions of implementation.

Investigating Data Use and Educational Improvement

As suggested earlier, a ripe area for research involves how assessment data are used to inform improvement efforts. In view of calls to establish a "culture of evidence" in our colleges and universities, it is surprising how little independent empirical research has been conducted on how assessment data are actually used in colleges and universities.[14]

This work can examine how assessment results are read and interpreted, whether and how those interpretations are converted to action, whether and how those action plans are implemented, and whether and how the results of implementation are monitored and assessed. Given the extent of assessment activity in higher education and the adoption of a number of standard assessment tools and programs, there should be considerable natural variation among institutions in how these processes unfold. Research into institutions with positive trends in NSSE results offers suggestive preliminary findings of the facilitative role played by external projects and initiatives (McCormick et al., 2011), offering another potentially important line of inquiry. Theories of organizational culture, learning, leadership, and change are particularly relevant for these questions.

Challenges and Opportunities

Student engagement research nevertheless faces a number of challenges. These include multiple uses of the term engagement in higher education, calls to more narrowly specify the content domain of student engagement, as well as calls to better our understanding of student engagement among historically underserved groups. As noted in the beginning of this chapter, engagement can mean many things in higher education. This can sow confusion about the various invocations of the term. In addition to previously described uses related to higher education's obligations to and contributions to the surrounding community and polity (community and civic engagement), Arum and Roksa (2011) used the term "social engagement" in their influential book *Academically Adrift* to refer to involvement with peers (ranging from group study to attending fraternity parties). Such varied uses can lead to misunderstandings about student engagement and what it represents.

Even within the literature on student engagement, the phenomena represented by the term are subject to challenge or debate. Some may see engagement's elision of effort, involvement, and integration as problematic. But seeking to impose distinctions among such closely related concepts may be unnecessary. Wolf-Wendel, Ward and Kinzie (2009) concluded that both involvement and engagement reflect the notion that students will invest varying amounts of energy in different activities and that the amount of learning is proportional to the quality and quantity of the college experience. In the authors' interviews with the originators of these concepts, Astin stated that there are "no essential differences" (p. 417) between the terms engagement and involvement, and Kuh indicated that there is considerable overlap between them. Indeed, in their 2005 review of the college impact literature, Pascarella and Terenzini used the terms interchangeably throughout the text.

Axelson and Flick (2010) object to the formulation of student engagement as including both student and institutional components, calling instead for a narrow focus on "student involvement in a learning process" (p. 42), with greater attention to cognitive and emotional, as well as behavioral engagement. As student engagement research matures, such conceptual and terminological refinements can advance theoretical development with regard to student engagement, though we believe that

retaining explicit attention to environmental factors on student learning and development will continue to be important.

At barely over 10 years old, student engagement as a framework for understanding the quality of undergraduate education is in its infancy. A hallmark of student engagement is its capacity to bridge the worlds of researcher and practitioner in the interest of research-informed improvement. Many possibilities exist for extending and refining this work to illuminate our understanding of teaching and learning in higher education and also to achieve a deeper understanding of how colleges and universities engage in intentional, systematic improvement. The work to date has demonstrated not only the promise but the necessity of closing the gap between research and practice.

Endnotes

1. There is also a K-12 literature on engagement, where the focus is more on psychosocial factors, such as motivation, investment, commitment, and interest in school. For example, see Reschly and Christenson (2012) and Newmann (1992).
2. These developments joined an existing movement encouraging sustained and systematic attention to the assessment of educational effectiveness, dating to the 1984 publication of *Involvement in Learning*. In that report, the National Institute of Education's Study Group on the Conditions of Excellence in American Higher Education (1984) had called for increasing "the amount of time, energy, and effort" that students devote to learning and setting high expectations for student learning. It also called for serious attention to the assessment of educational effectiveness. Two years later, the National Governors Association issued its own call for education reform, with another call for the assessment of college-level learning. At about the same time, Boyer (1987) published results from extensive campus visits, survey findings, and comprehensive interviews with key informants ranging from students, high school counselors, and admissions officers to chief academic officers. Boyer identified key issues such as the mismatch between student preparation and faculty expectations, fragmented curriculum, and faculty promotion and tenure policies that may detract from student learning.
3. *U.S. News* no longer publishes a magazine; it is now an exclusively Web-based outlet, except for its various rankings guidebooks. And its rankings enterprise has expanded beyond education to include hospitals, nursing homes, doctors, law firms, insurance companies, mutual funds, diets, and more. The title of the *U.S. News* home page confirms that rankings constitute its core business: "US News & World Report | News & Rankings | Best Colleges, Best Hospitals, and more" (retrieved from usnews.com on June 25, 2012).
4. Examples include increasing the emphasis on entrance examination scores in the admissions process so as to raise the institutional average and increasing the number of students admitted through early decision programs to elevate admissions yield statistics (a criterion that has since been dropped from the rankings formula in response to criticism). Both of these would have the impact of reducing the number of low-income and educationally disadvantaged students admitted. Ehrenberg (2002) documents the effect of rankings on college tuition, where improved rankings are shown to increase the number of applicants, which in turn lowers the burden of institutions to offer financial aid. However, institutions motivated to improve their ranking were under pressure to spend more educating each student, which drives up tuition.
5. Although the details of NSSE's development are beyond the scope of the present chapter, interested readers may refer to Kuh (2009) and Ewell (2010).
6. The initial design for NSSE was produced by a team assembled by Peter Ewell for the Pew Charitable Trusts. The design team included Alexander Astin, Gary Barnes, Arthur Chickering, John N. Gardner, George Kuh, Richard Light, and Ted Marchese (Kuh, 2009).

7. From 2000 through 2009, NSSE was administered to random samples of first-year students and seniors. Since 2010, at institutions electing the online survey administration mode (which constitute the vast majority), the default is to invite all first-year and senior students to complete the survey. CCSSE is administered in class: a stratified random sample of course sections is drawn, and surveys are distributed and completed in the sampled sections.
8. Initially computed only at the institutional level, NSSE benchmarks are now calculated at the student level and returned in student data files to facilitate analysis by subgroups within an institution.
9. Cronbach's alphas from 2011 are as follows (reported separately for first-year students and seniors, respectively): deep approaches to learning, .85 and .86; higher-order thinking, .82 and .83; integrative learning, .70 and .72; and reflective learning, .80 and .80.
10. Full-year GPA would include grades from courses taken during the fall, prior to NSSE administration but within the time period covered by NSSE questions about engagement experiences.
11. The possibility of a survivor effect is one reason why the Center for Community College Student Engagement developed the Survey of Entering Student Engagement, which is administered during the fall and asks students to report on their experiences during the first 3 weeks of college.
12. The final phase of data collection involved site visits to selected institutions. Data analysis from this phase is in progress as of this writing.
13. For evidence on and explanations for long-term changes in the amount of time full-time college students spend studying, see Babcock and Marks (2011) and McCormick (2011).
14. By "independent empirical research," we mean research that is not affiliated with or commissioned by an entity involved in providing data or in promoting or facilitating their use.

References

Ahlfeldt, S., Mehta, S., & Sellnow, T. (2005). Measurement and analysis of student engagement in university classes where varying levels of PBL methods of instruction are in use. *Higher Education Research and Development, 24*(1), 5–20.

Altbach, P. G. (1998). Research, policy, and administration in higher education: The *Review* at twenty. *The Review of Higher Education, 21*(3), 205–207.

Arum, R., & Roksa, J. (2011). *Academically adrift: Limited learning on college campuses*. Chicago: University of Chicago Press.

Association of American Colleges and Universities (AAC&U). (2007). *College learning for the new global century: A report from the National Leadership Council for Liberal Education and America's Promise*. Washington, DC: Author.

Astin, A. W. (1970). The methodology of research on college impact. *Sociology of Education, 43*, 223–254.

Astin, A. W. (1984). Student involvement: A developmental theory for higher education. *Journal of College Student Personnel, 25*, 297–308.

Astin, A. W. (1985). *Achieving educational excellence*. San Francisco: Jossey-Bass.

Astin, A. W. (1991). *Assessment for excellence: The philosophy and practice of assessment and evaluation in higher education*. San Francisco: Jossey-Bass.

Axelson, R. D., & Flick, A. (2010). Defining student engagement. *Change, 43*(1), 38–43.

Babcock, P., & Marks, M. (2011). The falling time cost of college: Evidence from a half century of time use data. *The Review of Economics and Statistics, 93*(2), 467–478.

Banta, T. W., Pike, G. R., & Hansen, M. J. (2009). The use of engagement data in institutional planning, assessment, and accreditation. In R. M. Gonyea and G. D. Kuh (Eds.), *Using NSSE in institutional research. New Directions for Institutional Research, 141*, 21–34.

Barkley, E. F. (2010). *Student engagement techniques: A handbook for college faculty*. San Francisco: Jossey-Bass.

Bean, J. P., & Eaton, S. (2000). A psychological model of college student retention. In J. Braxton (Ed.), *Rethinking the departure puzzle: New theory and research on college student retention* (pp. 48–61). Memphis, TN: University of Vanderbilt Press.

Bensimon, E. M. (2007). The underestimated significance of practitioner knowledge in the scholarship of student success. *The Review of Higher Education, 30*(4), 441–469.

Blaich, C. F., & Wise, K. S. (2010). Moving from assessment to institutional improvement. In T. A. Seifert, (Ed.). *Longitudinal Assessment for Institutional Improvement*. *New Directions for Institutional Research*, *2010*(S2), 67–78.

Blaich, C. F., & Wise, K. S. (2011a). *From gathering to using assessment results: Lessons from the Wabash National Study* (NILOA Occasional Paper No. 8). Urbana, IL: National Institute for Learning Outcomes Assessment.

Blaich, C. F., & Wise, K. S. (2011b). *The Wabash National Study: The impact of teaching practices and institutional conditions on student growth*. Paper presented at the annual meeting of the American Educational Research Association, New Orleans, LA.

Bolger, N., Davis, A., & Rafaeli, E. (2003). Diary methods: Capturing life as it is lived. *Annual Review of Psychology, 54*, 579–616.

Borden, V. M. H. & Young, J. W. (2007). Measurement validity and accountability for student learning. In V. M. H. Borden and G. R. Pike (Eds.), *Assessing and accounting for student learning: Beyond the Spellings Commission. New Directions for Institutional Research, Assessment Supplement 2007*, 19–37.

Bowen, H. R. (1977). *Investment in learning: The individual and social value of American higher education*. San Francisco: Jossey-Bass.

Boyer, E. L. (1987). *College: The undergraduate experience in America*. New York: Harper & Row.

Bridges, B. K., Cambridge, B., Kuh, G. D. & Leegwater, L. H. (2005). *Student engagement at minority- serving institutions: Emerging lessons from the BEAMS project. New Directions for Institutional Research,* 125.

Bridges, B. K., Kinzie, J., Nelson Laird, T. F., & Kuh, G. D. (2008). Student engagement and success at minority serving institutions. In M. Gasman, B. Baez, & C. S. Turner (Eds.), *Understanding Minority-Serving Institutions*. Albany, NY: SUNY Press.

Brint, S., Cantwell, A. M., & Hanneman, R. A. (2008). The two cultures of undergraduate academic engagement. *Research in Higher Education, 49*, 383–402.

Bringle, R. G., Games, R., & Malloy, E. A. (Eds.). (1999). *Colleges and universities as citizens*. Needham Heights, MA: Allyn and Bacon.

Campbell, C., & Cabrera, A. F. (2011). How sound is NSSE? Investigating the psychometric properties of NSSE at a public, research-extensive institution. *The Review of Higher Education, 35*(1), 77–103.

Carini, R. M., Kuh, G. D., & Klein, S. P. (2006). Student engagement and student learning: Testing the linkages. *Research in Higher Education, 47*(1), 1–32.

Chickering, A. W., & Gamson, Z. F. (1987, March). Seven principles for good practice in undergraduate education. *AAHE Bulletin*, 3–7.

Collins, J. C. (2001). *Good to great*. New York: Harper Collins.

Community College Survey of Student Engagement. (2010a). *The Community College Student Report*. Retrieved from http://www.ccsse.org/aboutsurvey/aboutsurvey.cfm

Community College Survey of Student Engagement. (2010b). *The relationship of the Community College Survey of Student Engagement (CCSSE) and the National Survey of Student Engagement (NSSE)*. Retrieved from http://www.ccsse.org/aboutccsse/relate.cfm

Council of Independent Colleges. (2008). *Evidence of learning: Applying the Collegiate Learning Assessment to improve teaching and learning in the liberal arts college experience*. Washington, DC: Author.

Council of Independent Colleges. (2011). *A special report on independent colleges and student engagement.* Washington, DC: Author. Retrieved from http://www.cic.edu/Research-and-Data/Making-the-Case/Documents/new_nsse_data.pdf

Cross, K. P. (2000). The educational role of researchers. In A. Kezar & P. Eckel (Eds.), *Moving beyond the gap between research and practice in higher education. New Directions for Higher Education 110,* 63–74.

Cruce, T. M., Wolniak, G. C., Seifert, T. A., & Pascarella, E. T. (2006). Impacts of good practices on cognitive development, learning orientations, and graduate degree plans during the first year of college. *Journal of College Student Development, 47*(4), 365–383.

Del Rios, M., & Leegwater, L. (2008). *Increasing student success at minority-serving institutions: Findings from the BEAMS project*. Washington, DC: Institute for Higher Education Policy.

Dowd, A. C., Sawatzsky, M., & Korn, R. (2011). Theoretical foundations and a research agenda to validate measures of intercultural effort. *The Review of Higher Education, 35*(1), 17–44.

Edgerton, R. (1997). *Education white paper* (unpublished manuscript). Retrieved from http://www.faculty.umb.edu/john_saltmarsh/resources/Edgerton%20Higher%20Education%20White%20Paper.rtf. Accessed 20 Apr 2012.

Ehrenberg, R. (2002). *Tuition rising: Why college costs so much*. Cambridge: Harvard University Press.

Ewell, P. T. (2010). The US National Survey of Student Engagement (NSSE). In D. D. Dill & M. Beerkens (Eds.), *Public policy for academic quality: Analyses of innovative policy instruments*. New York: Springer.

Ewell, P. T., & Jones, D. P. (1993). Actions matter: The case for indirect measures in assessing higher education's progress on the national education goals. *The Journal of General Education, 42*(2), 123–148.

Ewell, P. T., & Jones, D. P. (1996). *Indicators of "good practice" in undergraduate education: A handbook for development and implementation*. Boulder, CO: National Center for Higher Education Management Systems.

Ewell, P. T., McClenney, K., & McCormick, A. C. (2011, September 20). Measuring engagement. *Inside Higher Ed.* Retrieved from www.insidehighered.com/views/2011/09/20/essay_defending_the_value_of_surveys_of_student_engagement

Feldman, K., & Newcomb, T. (1969). *The impact of college on students.* (2 Vols.). San Francisco: Jossey-Bass.

Fosnacht, K. & Gonyea, R. M. (2012). *The dependability of the NSSE 2012 pilot: A generalizability study*. Paper presented at the annual meeting of the Association for Institutional Research, New Orleans, LA.

Gabriel, K. F. (2008). *Teaching underprepared students: Strategies for promoting success and retention in higher education*. Sterling, VA: Stylus.

Gladwell, M. (2011, February 14). The order of things. *The New Yorker, 87*(1), 68–75.

Graham, A., & Thompson, N. (2001). Broken ranks. *The Washington Monthly, 33*, 9–13.

Greene, T., Marti, C. N., & McClenney, K. M. (2007). The effort-outcome gap: Differences for African-American and Hispanic community college students in student engagement and academic achievement. *Journal of Higher Education, 79*(5), 513–539.

Harper, S. R., & Quaye, S. J. (Eds.). (2009). *Student engagement in higher education: Theoretical perspectives and practical approaches for diverse populations*. New York: Routledge.

Hu, S., & McCormick, A. C. (2012). An engagement-based student typology and its relationship to college outcomes. *Research in Higher Education, 53*, 738–754.

Hughes, R., & Pace, C. R. (2003). Using NSSE to study student retention and withdrawal. *Assessment Update, 15*(4), 1–2, 15.

Keller, G. (1985). Trees without fruit: The problem with research about higher education. *Change, 17*(1), 7–10.

Kezar, A. (2000). Understanding the research-to-practice gap: A national study of researchers' and practitioners' perspectives. In A. Kezar & P. Eckel (Eds.), *Moving beyond the gap between research and practice in higher education. New Directions for Higher Education 110*, 9–19.

Kinzie, J., & Pennipede, B. S. (2009). Converting engagement results into action. In R. M. Gonyea & G. D. Kuh (Eds.), *Using NSSE in institutional research. New Directions for Institutional Research, 141.*

Kuh G. D. (n.d.). *The National Survey of Student Engagement: Conceptual framework and overview of psychometric properties*. Bloomington: Center for Postsecondary Research, Indiana University. Retrieved from http://nsse.iub.edu/pdf/conceptual_framework_2003.pdf. Accessed 25 Feb 2010.

Kuh, G. D. (2001). Assessing what really matters to student learning: Inside the National Survey of Student Engagement. *Change, 33*(3), 10–17.

Kuh, G. D. (2003). What we're learning about student engagement from NSSE. *Change, 35*(2), 24–32.

Kuh, G. D. (2008). *High-Impact educational practices: What they are, who has access to them, and why they matter*. Washington, DC: Association of American Colleges and Universities.

Kuh, G. D. (2009). The National Survey of Student Engagement: Conceptual and empirical foundations. In R. M. Gonyea & G. D. Kuh (Eds.). *Using NSSE in institutional research. New Directions for Institutional Research, 141,* 5–20.

Kuh, G. D., Cruce, T. M., Shoup, R., Kinzie, J., & Gonyea, R. M. (2008). Unmasking the effects of student engagement on first-year college grades and persistence. *Journal of Higher Education, 79*, 540–563.

Kuh, G. D., Hayek, J. C., Carini, R. M., Ouimet, J. A., Gonyea, R. M., & Kennedy, J. (2001). *NSSE technical and norms report*. Bloomington, IN: Indiana University Center for Postsecondary Research.

Kuh, G. D., Kinzie, J., Cruce, T. M., Shoup, R., & Gonyea, R. M. (2007). *Connecting the dots: Multi-faceted analyses of the relationships between student engagement results from the NSSE, and the institutional practices and conditions that foster student success*. Bloomington, IN: Indiana University Center for Postsecondary Research.

Kuh, G. D., Kinzie, J., Schuh, J. H., & Whitt, E. J. (2005). *Assessing conditions to enhance educational effectiveness: The inventory for student engagement and success*. San Francisco: Jossey-Bass.

Kuh, G. D., Kinzie, J., Schuh, J. H., & Whitt, E. J. (2011). Fostering student success in hard times. *Change, 43*(4), 13–19.

Kuh, G. D., Kinzie, J., Schuh, J. H., Whitt, E. J., & Associates. (2010). *Student success in college: Creating conditions that matter*. San Francisco: Jossey-Bass.

Kuh, G. D., Pace, C. R., & Vesper, N. (1997). The development of process indicators to estimate student gains associated with good practices in undergraduate education. *Research in Higher Education, 38*(4), 435–454.

LaNasa, S. M., Cabrera, A. F., & Transgrud, H. (2009). The construct validity of student engagement: A confirmatory factor analysis approach. *Research in Higher Education, 50*, 315–332.

Loes, C., Pascarella, E., & Umbach, P. (2012). Effects of diversity experiences on critical thinking skills: Who benefits? *Journal of Higher Education, 83*(1), 1–25.

Machung, A. (1998). Playing the rankings game. *Change, 30*(4), 12–16.

Marti, C. N. (2009). Dimensions of student engagement in American community colleges: Using the Community College Student Report in research and practice. *Community College Journal of Research and Practice, 33*(1), 1–24.

Marton, F., & Säljö, R. (1976a). On qualitative differences in learning. I: Outcome and process. *British Journal of Educational Psychology, 46*, 4–11.

Marton, F., & Säljö, R. (1976b). On qualitative differences in learning. II: Outcome as a function of the learner's conception of the task. *British Journal of Educational Psychology, 46*, 115–127.

Marton, F., & Säljö, R. (1984). Approaches to learning. In F. Marton, D. J. Hounsell, & N. J. Entwistle (Eds.), *The experience of learning* (pp. 39–58). Edinburgh, UK: Scottish Academic.

Mayhew, M. J., Seifert, T. A., Pascarella, E. T., Nelson Laird, T. F., & Blaich, C. (2012). Going deep into mechanisms for moral reasoning growth: How deep learning approaches affect moral reasoning development for first-year students. *Research in Higher Education, 53*, 26–46.

McClenney, K. M. (2007). Research update: The Community College Survey of Student Engagement. *Community College Review, 35*(2), 137–146.

McClenney, K. M., & Marti, C. N. (2006). *Exploring relationships between student engagement and student outcomes in community colleges: Report on validation research*. Retrieved from www.ccsse.org/publications on 6 Apr 2010.

McCormick, A. C. (2009). Toward reflective accountability. In R. M. Gonyea & G. D. Kuh (Eds.), *Using NSSE in institutional research. New Directions for Institutional Research, 141,* 97–106.

McCormick, A. C. (2011). It's about time: What to make of reported declines in how much college students study. *Liberal Education, 97*(1), 30–39.

McCormick, A. C., Kinzie, J., & Korkmaz, A. (2011, April). *Understanding evidence-based improvement in higher education: The case of student engagement*. Paper presented at the annual meeting of the American Educational Research Association, New Orleans, LA.

McCormick, A. C., & McClenney, K. (2012). Will these trees ever bear fruit? A response to the special issue on student engagement. *The Review of Higher Education, 35*(2), 307–333.

McCormick, A. C., Pike, G. R., Kuh, G. D., & Chen, P. D. (2009). Comparing the utility of the 2000 and 2005 Carnegie classification systems in research on students' college experiences and outcomes. *Research in Higher Education, 50*(2), 144–167.

McDonough, P. M., Antonio, A. L., Walpole, M., & Perez, L. X. (1998). College rankings: Democratized knowledge for whom? *Research in Higher Education, 39*(5), 513–537.

Merwin, J. C. (1969). Historical review of changing concepts of evaluation. In R. L. Tyler (Ed.), *Educational evaluation: New roles, new methods.* The sixty-eighth yearbook of the National Society for the Study of Education, Part II. Chicago: University of Chicago Press.

National Center for Higher Education Management Systems. (1994). *A preliminary study of the feasibility and utility for national policy of instructional "good practice" indicators in undergraduate education*. Washington, DC: U.S. Department of Education, National Center for Education Statistics.

National Survey of Student Engagement. (2001). *Improving the college experience: National benchmarks for effective educational practice*. Bloomington, IN: Indiana University Center for Postsecondary Research.

National Survey of Student Engagement. (2003). *Converting data into action: Expanding the boundaries of institutional improvement*. Bloomington, IN: Indiana University Center for Postsecondary Research.

National Survey of Student Engagement. (2004). *Student engagement: Pathways to collegiate success*. Bloomington, IN: Indiana University Center for Postsecondary Research.

National Survey of Student Engagement. (2006). *Engaged learning: Fostering success of all students*. Bloomington, IN: Indiana University Center for Postsecondary Research.

National Survey of Student Engagement. (2007). *Experiences that matter: Enhancing student learning and success*. Bloomington, IN: Indiana University Center for Postsecondary Research.

National Survey of Student Engagement. (2008). *Promoting engagement for all students: The imperative to look within—2008 results*. Bloomington, IN: Indiana University Center for Postsecondary Research.

National Survey of Student Engagement. (2009a). *Assessment for improvement: Tracking student engagement over time—Annual results 2009*. Bloomington, IN: Indiana University Center for Postsecondary Research.

National Survey of Student Engagement. (2009b). *Using NSSE to assess and improve undergraduate education. Lessons from the field–Vol. 1*. Bloomington, IN: Indiana University Center for Postsecondary Research.

National Survey of Student Engagement. (2011). *Fostering student engagement campus wide—Annual results 2011*. Bloomington, IN: Indiana University Center for Postsecondary Research.

National Survey of Student Engagement. (2012). *Moving from data to action: Lessons from the field–Volume 2*. Bloomington, IN: Indiana University Center for Postsecondary Research.

Nelson Laird, T. F., Bridges, B. K., Morelon-Quainoo, C. L., Williams, J. M., & Salinas Holmes, M. (2007). African American and Hispanic student engagement at minority serving and predominantly White institutions. *Journal of College Student Development, 48*(1), 1–18.

Nelson Laird, T. F., & Niskodé-Dossett, A. S. (2010). How gender and race moderate the effect of interactions across difference on student perceptions of the campus environment. *The Review of Higher Education, 33*(3), 333–356.

Nelson Laird, T. F., Shoup, R., & Kuh, G. D. (2006). *Measuring Deep Approaches to Learning Using the National Survey of Student Engagement*. Paper presented at the annual meeting of the Association for Institutional Research, Chicago, IL.

Nelson Laird, T. F., Shoup, R., Kuh, G. D., & Schwarz, M. (2008). The effects of discipline on deep approaches to student learning and college outcomes. *Research in Higher Education, 49*(6), 469–494.

Newmann, F. P. (Ed.). (1992). *Student engagement and achievement in American secondary schools*. New York: Teachers College Press.

Ouimet, J. A., Bunnage, J. C., Carini, R. M., Kuh, G. D., & Kennedy, J. (2004). Using focus groups, expert advice, and cognitive interviews to establish the validity of a college student survey. *Research in Higher Education, 45*(3), 233–250.

Ouimet, J. A., & Smallwood, R. A. (2005). Assessment measures: CLASSE—The class-level survey of student engagement. *Assessment Update, 17*(6), 13–15.

Pace, C. R. (1964). *The influence of academic and student subcultures in college and university environments*. Los Angeles, CA: University of California, Los Angeles.

Pace, C. R. (1969). An evaluation of higher education: Plans and perspectives. *Journal of Higher Education, 40*(9), 673–681.

Pace, C. R. (1979). *Measuring outcomes of college: Fifty years of findings and recommendations for the future*. San Francisco: Jossey-Bass.

Pace, C. R. (1980). Measuring the quality of student effort. *Current Issues in Higher Education, 2*, 10–16.

Pace, C. R. (1982). *Achievement and the quality of student effort*. Washington, DC: National Commission on Excellence in Education.

Pace, C. R. (1984). *Measuring the quality of college student experiences*. An account of the development and use of the College Student Experiences Questionnaire. Los Angeles: Higher Education Research Institute.

Pace, C. R. (1985). *The credibility of student self-reports*. Los Angeles, CA: Center for the Study of Evaluation, University of California.

Pace, C. R. (1998). Recollections and reflections. In J. C. Smart (Ed.), *Higher education: Handbook of theory and research* (Vol. 13, pp. 1–34). New York: Agathon.

Padgett, R. D., Goodman, K. M., Johnson, M. P., Saichaie, K., Umbach, P. D., & Pascarella, E. T. (2010). The impact of college student socialization, social class, and race on need for cognition. *New Directions for Institutional Research, 145*, 99–111.

Paris, D. (2011). *Catalyst for change: The CIC/CLA consortium*. Washington, DC: Council of Independent Colleges.

Pascarella, E. T. (1985). College environmental influences on learning and cognitive development: A critical review and synthesis. In J. C. Smart (Ed.), *Higher education: Handbook of theory and research* (Vol. 1). New York: Agathon.

Pascarella, E. T., Seifert, T. A., & Blaich, C. (2010). How effective are the NSSE benchmarks in predicting important educational outcomes? *Change, 42*(1), 16–22.

Pascarella, E. T., & Terenzini, P. T. (1991). *How college affects students: Findings and insights from twenty years of research*. San Francisco: Jossey-Bass.

Pascarella, E. T., & Terenzini, P. T. (2005). *How college affects students: A third decade of research* (Vol. 2). San Francisco: Jossey-Bass.

Peters, T. J., & Waterman, R. H. (1982). *In search of excellence: Lessons from America's best-run companies*. New York: Harper & Row.

Pike, G. R. (1995). The relationship between self reports of college experiences and achievement test scores. *Research in Higher Education, 36*, 1–22.

Pike, G. R. (1999). The effects of residential learning communities and traditional residential living arrangements on educational gains during the first year of college. *Journal of College Student Development, 40*, 269–284.

Pike, G. R. (2000). The influence of fraternity or sorority membership on students' college experiences and cognitive development. *Research in Higher Education, 41*, 117–139.

Pike, G. R. (2006a). The convergent and discriminant validity of NSSE scalelet scores. *Journal of College Student Development, 47*(5), 551–564.

Pike, G. R. (2006b). The dependability of NSSE scalelets for college-and department-level assessment. *Research in Higher Education, 47*(2), 177–195.

Pike, G. R. (2011). Using college students' self-reported learning outcomes in scholarly research. In S. Herzog & N. A. Bowman (Eds.), *Validity and limitations of college student self-report data. New Directions for Institutional Research, 150,* 41–58.

Pike, G. R., & Killian, T. (2001). Reported gains in student learning: Do academic disciplines make a difference? *Research in Higher Education, 42*, 429–454.

Pike, G. R., & Kuh, G. D. (2005a). First- and second-generation college students: A comparison of their engagement and intellectual development. *Journal of Higher Education, 76*, 276–300.

Pike, G. R., & Kuh, G. D. (2005b). A typology of student engagement for American colleges and universities. *Research in Higher Education, 46*(2), 185–209.

Pike, G. R., Kuh, G. D., & Gonyea, R. M. (2007). Evaluating the rationale for affirmative action in college admissions: Direct and indirect relationships between campus diversity and gains in understanding diverse groups. *Journal of College Student Development, 48*(2), 1–17.

Porter, S. R. (2011). Do college student surveys have any validity? *The Review of Higher Education, 35*(1), 45–76.

Reschly, A. L., & Christenson, S. L. (2012). Jingle, jangle, and conceptual haziness: Evolution and future directions of the engagement construct. In S. L. Christenson, A. L. Reschly, & C. Wylie (Eds.), *Handbook of research on student engagement* (pp. 3–19). New York: Springer.

Saltmarsh, J., & Hartley, M. (Eds.). (2011). *"To serve a larger purpose": Engagement for democracy and the transformation of higher education*. Philadelphia, PN: Temple University Press.

Seifert, T. A., Goodman, K. M., Lindsay, N., Jorgensen, J. D., Wolniak, G. C., Pascarella, E. T., & Blaich, C. (2008). The effects of liberal arts experiences on liberal arts outcomes. *Research in Higher Education, 49*(2), 107–125.

Smith, K. A., Sheppard, S. D., Johnson, D. W., & Johnson, R. T. (2005). Pedagogies of engagement: Classroom-based practices. *Journal of Engineering Education, 94*(1), 87–102.

Study Group on the Conditions of Excellence in American Higher Education. (1984). *Involvement in learning: Realizing the potential of American higher education. Final report of the Study Group on the Conditions of Excellence in American Higher Education*. Washington, DC: National Institute of Education.

Terenzini, P. T. (1996). Rediscovering roots: Public policy and higher education research. *The Review of Higher Education, 20*(1), 5–13.

Thacker, L. (2008). Pulling rank. *New England Journal of Higher Education, 22*(4), 15–16.

Thompson, N. (2000, September). Playing with numbers: How U.S. News mismeasures higher education and what we can do about it. *The Washington Monthly, 32*(9), 16–23.

Tinto, V. (1975). Dropouts from higher education: A theoretical synthesis of the recent literature. *Review of Educational Research, 45*, 89–125.

Tinto, V. (1986). Theories of student departure revisited. In J. C. Smart (Ed.), *Higher education: Handbook of theory and research* (Vol. 11, pp. 359–384). New York: Agathon.

Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition* (2nd ed.). Chicago: University of Chicago Press.

Tourangeau, R., Rips, L., & Rasinski, K. (2000). *The psychology of survey response*. Cambridge: Cambridge University Press.

Wolf-Wendel, L., Ward, K., & Kinzie, J. (2009). A tangled web of terms: The overlap and unique contribution of involvement, engagement, and integration to understanding college student success. *Journal of College Student Development, 50*(4), 407–428.

Zhao, C., & Kuh, G. D. (2004). Adding value: Learning communities and student engagement. *Research in Higher Education, 45*, 115–138.

Zlotkowski, E. (1997). Service learning and the process of academic renewal. *Journal of Public Service and Outreach, 2*(1), 80–87.