Why Colleges and Universities Need to Invest in Quality Teaching More Than Ever

Faculty Development, Evidence-Based Teaching Practices, and Student Success

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Dear colleagues,

We all realize that in the knowledge economy, a solid postsecondary education is more important than ever. But far too many students who enter our doors fail to obtain degrees. Those who never complete will likely find themselves at a distinct economic disadvantage for the rest of their lives. Despite growing research that shows students learn more from improved instruction, teaching is largely overlooked in the conversation about college retention and completion. Many faculty members receive too little support for their classroom responsibilities as a result, to the detriment of students.

Despite much evidence to the contrary, we tend to fall back on the notion that being an expert in a discipline makes you an effective teacher of it. Many part-time professors, who now make up a majority share of the nation's faculty workforce, still rely heavily on traditional lecture-based teaching practices that contradict the latest findings on how people learn. It's not only the part-timers of whom this is true, but an overwhelming majority of these adjuncts receive no resources for professional development.

But there are reasons to be optimistic. This year, the American Council on Education (ACE) made effective teaching a top priority and is urging members to dramatically expand high-impact teaching practices. ACE has also endorsed the new online Course in Effective Teaching Practices, developed by the Association of College and University Educators (ACUE), which is the impetus for the attached white paper. I am a founding member on ACUE's Board of Advisors, and it has been exhilarating to see the collective enthusiasm for a resource that is high-quality, scalable, and research-based.

This paper presents the available research on the connections among better teaching, improved student learning outcomes, higher degree completion, and institutional financial solvency. It helps make the case that strengthening the pedagogical core of what we do in our classes can have multiple positive effects throughout higher education.

Have a great class,

Kevin Reilly
President Emeritus & Regent Professor
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Executive Summary

In order for the United States to compete in the global marketplace, it is critical that more students successfully earn college degrees. The fast pace of change in the knowledge economy means that earning a college degree has never been more important. Yet over the past decade, the place of the United States as a global leader in college completion has slipped considerably (Organisation for Economic Co-operation and Development, 2014) with fewer than half of the students entering a 4-year degree program earning a degree within 4 to 6 years (National Center for Public Policy and Higher Education and the Southern Regional Education Board, 2010; Symonds, Schwartz, & Ferguson, 2011). In this paper, prepared by the Association of College and University Educators (ACUE), we maintain that in order for the United States to regain its status as a global leader in college degree attainment, higher education leaders must focus their efforts on improving the quality of instruction in college classrooms. This paper is a compendium to The Essentials of College Instruction: ACUE's Course in Effective Teaching Practices, which provides a comprehensive bibliography of ACUE's Course in Effective Teaching Practices, a first-of-its-kind online program for faculty development that prepares faculty to know and be able to apply a core set of evidence-based teaching practices.

In this paper, we discuss the body of literature that defines effective research-based teaching practices and demonstrates the strong positive role of high-quality teaching as a key factor in college persistence and graduation. We point out that tenure-track and adjunct faculty have a strong commitment to their work and want to improve their instructional practices. We present research evidence indicating that coordinated, systemic professional development efforts at the postsecondary level are related to improved student outcomes, including higher retention and graduation rates. We delineate the considerable costs associated with student retention, attrition, and delayed graduation (Complete College America, 2014; Schneider, 2010). We conclude by recommending that higher education institutions invest in professional development as a fundamental part of their overall strategic plan for improving graduation rates and ensuring student success.

COLLEGE STUDENTS NEED EFFECTIVE INSTRUCTORS MORE THAN EVER

In today's complex higher education climate of increasing accountability, decreasing budgets, and a more diverse student population, millions of students enter college unprepared. Only half of students who enter a 4-year bachelor's program graduate within 6 years, and only a third graduate on time at flagship campuses. However, findings from decades of educational research indicate that in order to ensure student success, higher education institutions can no longer ignore the positive impact and untapped potential of good teaching. Given this evidence, a growing body of researchers and policymakers are beginning to acknowledge that "the necessity for improving quality teaching has never been as compelling" (Saroyan & Trigwell, 2015, p. 92).

EFFECTIVE INSTRUCTION DIRECTLY IMPACTS STUDENT SUCCESS

Educational research conducted over the last 40 years has established that instructors are the most crucial variable affecting student outcomes. A growing body of literature indicates that effective teaching improves students' critical thinking and persistence and that "when faculty improve their teaching, students learn more, and their performance on course work improves" (Condon, Iverson, Manduca, Rutz, & Willett, 2016, p. 125). The evidence is clear: With effective instruction, college students learn more, develop critical life skills, and complete their degrees.

THE TECHNIQUES OF EFFECTIVE COLLEGE INSTRUCTION ARE KNOWN

Research-based instructional techniques are well-documented and have been further informed by research on cognition (Ambrose, Bridges, Lovett, DiPietro, & Norman, 2010; Angelo & Cross; 1993; Bain, 2004; Barkley, 2009; Brookfield, 2006; Chickering & Gamson, 1987; Davis, 2009; Nilson, 2010). Taken as a whole, this research demonstrates the strong positive role of high-quality teaching and presents the classroom experience—particularly the quality of instruction—as a key factor in college persistence and graduation.

THE ROLE OF ADJUNCT FACULTY IS INCREASING

At colleges and universities across the country, adjunct faculty now account for almost three quarters of the instructional faculty. The increased reliance on nontenure-track faculty could negatively affect student retention and graduation rates. However, quality professional development opportunities have the potential to positively impact teaching practices. When provided with professional development opportunities, adjunct faculty are more likely to use evidence-based teaching practices that produce positive student outcomes. On a majority of campuses, however, adjunct faculty receive little, if any, formal preparation or professional development in effective teaching practices (Eagan et al., 2014).

COLLEGE FACULTY WANT TO BECOME BETTER EDUCATORS

National surveys of higher education faculty report a strong commitment to their work and a desire for high-quality professional development. One survey found that 9 in 10 higher education faculty members believe that professional development is important to their careers and would help improve student outcomes (Hart Research Associates, 2015). While university teaching centers provide professional development, they rarely get the funding needed to improve teaching practices at a scale that positively impacts student outcomes. The result is that, although college educators want to improve, over half of college instructors continue to rely heavily on teacher-centered practices like lecturing—a format that contradicts the principles of learning.

STUDENT OUTCOMES AND FACULTY PROFESSIONAL DEVELOPMENT ARE RELATED

Faculty professional development has long been understood as central to improving teacher satisfaction, classroom instruction, and student achievement. Yet it has historically been a low priority at many higher education institutions. Research evidence, however, indicates that coordinated, systemic professional development efforts at the postsecondary level are related to improved student outcomes, including higher retention and graduation rates as well as greater faculty satisfaction, engagement, and sense of belonging (Condon et al., 2016).

STUDENT ATTRITION AND DELAYED GRADUATION ARE COSTLY

The costs associated with student retention, attrition, and delayed graduation are considerable. In a comprehensive study of college attrition costs, the Education Policy Institute examined the relationship between attrition and annual lost revenue at 4-year public, private, and for-profit colleges and universities and found that the collective lost revenue due to attrition was $16.5 billion (Raisman, 2013). A similar study by the American Institutes for Research estimated that student attrition cost a combined $4.5 billion in foregone income and federal and state income taxes (Schneider, 2010).

Why Colleges and Universities Need to Invest in Quality Teaching More Than Ever

Faculty Development, Evidence–Based Teaching Practices, and Student Success

COLLEGE STUDENTS NEED EFFECTIVE INSTRUCTORS MORE THAN EVER

Today, millions of students start college unprepared. According to estimates by the National Center for Public Policy and Higher Education and the Southern Regional Education Board (2010) and the National Center for Education Statistics (2013), about 40% of first-year undergraduates are unprepared for college-level coursework in math and reading, resulting in many being required to take noncredit, remedial courses in English and math. As a result, only half of students who enter a 4-year bachelor's program graduate within 6 years, and only a third graduate on time at flagship and research campuses (Symonds et al., 2011). Not surprisingly, the ranking of the United States as a global leader in college completion has slipped considerably, from fourth in the world at the turn of this century to its present global ranking of 11th place, trailing countries such as Iceland, Poland, and New Zealand (Organisation for Economic Co-operation and Development, 2014). So, how should leaders and policymakers in higher education institutions in the United States focus their efforts to improve on these downward trends? Students struggle to complete degrees for many reasons, including financial concerns. However, findings from decades of educational research point to the fact that we should not ignore the positive impact and untapped potential of good teaching. In short, effective instruction leads to better student outcomes.

In today's complex higher education climate of increasing accountability, decreasing budgets, and a more diverse student population, "the necessity for improving quality teaching has never been as compelling" (Saroyan & Trigwell, 2015, p. 92). Administrators, researchers, and policymakers in primary and secondary education have acknowledged this fact and as a result, teacher training programs and professional development are the focus of considerable attention and support in K–12 education. Researchers and policymakers are beginning to acknowledge that it is just as imperative for higher education faculty to demonstrate a core set of effective teaching competencies and attributes in the classroom (Bernard, 2015). McKee and Tew (2013) have argued that in order for colleges and universities to "manage societal shifts of near epoch proportion . . . faculty development should be viewed as a necessity, not a nicety" (p. 3). In spite of this, the focus on quality teaching in higher education has been limited. As Tinto (2004) wrote, "Higher education faculties are in fact the only faculty in education that, as a matter of practice, are not trained to teach their own students" (p. 9).

Findings from decades of educational research point to the fact that we cannot ignore the positive impact and untapped potential of good teaching.

EFFECTIVE INSTRUCTION DIRECTLY IMPACTS STUDENT SUCCESS

Educational research conducted over the last 40 years has confirmed that instructors are the most crucial variable affecting student outcomes (Gordon, 2012). Stronge (2010) wrote that "of all the factors within our control in the educational enterprise, teacher quality matters most" (p. 85). There is a growing body of literature that links effective teaching to improved learning and student persistence (Crockett, 2015). For example, in one recent study, Oolbekkink-Marchand, Van Driel, and Verloop (2014) found that the key factor for ensuring students' successful transition from secondary to higher education is the university instructor.

In other recent research, Condon et al. (2016) conducted a 3-year longitudinal study in which the researchers tracked the outcomes of faculty development on both effective teaching practices and undergraduate student writing achievement. Findings from the study revealed gains not only in effective teaching practices but also in student writing scores. Given these results, Condon et al. asserted that "At the end of [our] study, the results could not be clearer. When faculty improve their teaching, students learn more, and their performance on course work improves" (p. 125). In another recent longitudinal study of the influence of instruction on undergraduate student outcomes, Wang, Pascarella, Nelson Laird, and Ribera (2015) found that clear and organized instruction had a significant effect on deep learning and higher order thinking. In related research, Abrami et al. (2015) studied the impact of instruction on students' critical thinking and found that critical thinking skills improve when instructors provide students with opportunities for dialogue; engagement with authentic, situated problems to solve; and exposure to real-world examples within their discipline. Other recent research found that "student perceptions of instructor clarity and organization are associated with student gains in . . . critical thinking, academic motivation, persistence . . . [and] likelihood of obtaining" a college degree (Loes & Pascarella, 2015, p. 1).

The evidence is clear: With effective instruction, college students learn more, develop important life skills, and complete their degrees.

The evidence is clear. With effective instruction, college students learn more, develop important life skills, and complete their degrees. In their comprehensive report for the National Symposium on Postsecondary Student Success, George Kuh of Indiana University, Brian Bridges of the American Council on Education, John Hayek of the Kentucky Council on Postsecondary Education, and their colleagues concluded that the "widespread use of effective pedagogical practices must be at the core of any agenda to promote student success" (Kuh, Kinzie, Buckley, Bridges, & Hayek, 2006). They found that students learn more in active, collaborative, and problem-focused classrooms where the environment is supportive and expectations are clear.

THE TECHNIQUES OF EFFECTIVE COLLEGE INSTRUCTION ARE KNOWN

Since Chickering and Gamson (1987) published their influential "Seven Principles for Good Practice in Undergraduate Education," research-based techniques of effective instruction have been well-documented. Bain's (2004) writings, along with handbooks by Angelo and Cross (1993), Brookfield (2006), Barkley (2009), Davis (2009), Nilson (2010), and others have helped faculty improve course design, establish supportive environments, use active learning strategies,

and assess in ways that deepen learning. These practices have been informed by research on cognition, as documented by Ambrose et al. (2010) in How Learning Works: Seven Research-Based Principles for Smart Teaching.

Taken as a whole, this research demonstrates the strong positive role of high-quality teaching and presents the classroom experience—particularly the quality of instruction—as a key factor in college persistence and graduation. A primary finding is that high-quality teaching is related to student retention, which ultimately leads to graduation (Beal & Noel, 1980; Braxton, Bray, & Berger, 2000; Crockett, 2015; Gansemer-Topf & Schuh, 2004; Hu, McCormick, & Gonyea, 2012; Kezar & Maxey, 2014; Umbach & Wawrzynski, 2005). In their research, Easton and Guskey (1983) found that instructors had the greatest impact on the percentage of students completing college courses, more so than the college that the student was attending, the department within which the course was offered, or the course content area. The National Center for Enrollment Management has suggested that increasing student-centered instruction, as part of systematic retention efforts, can improve graduation rates by as much as 20% (Raisman, 2013). These findings suggest that, over the past 30 years, researchers have noted a strong correlation among quality instruction, student learning, and student retention.

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The process through which faculty instructional quality translates to student retention and graduation is represented by a theoretical model developed by sociologist Vincent Tinto, who is widely considered to be the leading expert on student retention. Tinto's model explains the processes of interaction between the individual and the institution that lead different individuals to drop out of institutions of higher education. In his book Leaving College, Tinto (1993) argued that student departures are due to a failure of the campus to create a sense of belonging for the student. Tinto's model contends that academic and social integration affect the development of students' commitment to the institution and their goal of completing college (Braxton et al., 2000). Specifically, higher levels of student academic integration and higher levels of social integration translate to a greater level of commitment to college graduation (Braxton et al., 2000). The greater the level of institutional commitment to college graduation, the more likely it is that the student will persist in college (Braxton et al., 2000). Importantly, the mechanism though which this commitment develops originates in the classroom. As Tinto (2006) stated, "It is increasingly clear that faculty actions in the classroom are critical to institutional efforts to increase retention" (p. 7).

Evidence suggests that faculty teaching skills—including organization, preparation, and clarity—exert an influence on college student departure decisions (Braxton et al., 2000). Not only do these skills positively affect student course achievement (Cohen, 1981; Feldman, 1989), but, as noted above, they also contribute to the development of cognitive and critical thinking skills (Pascarella, Edison, Nora, Hagedorn, & Braxton, 1996; Pundak, Herscovitz, Shacham, & Wiser-Biton, 2009). These skills also have a direct positive effect on social integration, which then impacts commitment and intent to reenroll (Braxton et al., 2000). Students who are taught by faculty with these skills are more likely to put effort into the social communities of their college (Braxton et al., 2000). In other words, students' social connections with their institutions are influenced by their in-class experiences, and this in turn directly affects students' desire to persist at a given institution (Braxton et al., 2000). Tinto (2006) reinforced this point: "If involvement does not occur [in class], it is unlikely to occur elsewhere" (p. 4). This means that increasing the quality of

classroom instruction is a key factor in efforts to positively impact retention. In addition to faculty teaching skills, extensive evidence also demonstrates that student–faculty interaction—in and out of the classroom—is strongly correlated with student success, including persistence and degree completion (Astin, 1993; Kuh, Kinzie, Schuh, Whitt, & Associates, 2005; Pascarella & Terenzini, 2005; Swail, Redd, & Perna, 2003). As Umbach and Wawrzynski (2005) have pointed out, faculty members' "behaviors and attitudes affect students profoundly, which suggests that faculty members play the single most important role in student learning" and retention (p. 21).

THE ROLE OF ADJUNCT FACULTY IS INCREASING

The faculty in higher education today are dramatically different from those of 30 years ago. This fact was recently highlighted in the decision of the National Labor Relations Board (NLRB; 2016) to recognize teaching assistants' right to unionize. The NLRB's decision brings attention to the fact that graduate students, along with 1 million adjunct professors, teach most of the classes in higher education today. In total, adjunct or contingent faculty account for almost three quarters of the instructional faculty at nonprofit colleges and universities across the country, compared to less than one quarter in 1969 (Kezar & Maxey, 2013). The increase in the number of nontenure-track faculty has created a need for institutions to support and empower these faculty—and all faculty members—to provide the quality of education that meets the institutions' goals for student learning and graduation (Kezar & Maxey, 2014).

Empirical research suggests that an increased reliance on nontenure-track faculty could negatively affect student retention and graduation rates, but professional development opportunities have the potential to positively impact teaching practices and retention. Jaeger and Eagan (2011) found that graduation rates declined as the number of nontenure-track faculty increased. Other evidence has indicated that adjunct faculty members use fewer student-centered, active, high-impact teaching approaches, which are associated with successful learning (Baldwin & Wawrzynski, 2011; Umbach, 2007). By contrast, tenure-track faculty are said to use more student-centered and engaging teaching practices, such as getting to know students and having more frequent and substantive interactions with them (Umbach, 2007; Umbach & Wawrzynski, 2005). While the reasons part-time faculty are less likely to use effective teaching strategies are unclear, research indicates that professional development has the potential to increase the use of effective teaching practices for both tenure- and nontenure-track faculty. When provided with professional development opportunities, nontenure-track faculty members are more likely to use teaching practices that produce positive student outcomes (Figlio, Schapiro, & Soter, 2013). Unfortunately, according to the Higher Education Research Institute's (HERI) Undergraduate Teaching Faculty Survey, "This growing component of the academic workforce continues to be largely overlooked by researchers and administrators" (Eagan et al., 2014, p. 17). In fact, "few [part-time] faculty at any institutional type reported having access to professional development" (p. 18). Thus, although their primary job is to teach, adjunct and contingent faculty receive little, if any, formal preparation or professional development in effective teaching practices.

In total, adjunct or contingent faculty account for almost three quarters of the instructional faculty at nonprofit colleges and universities across the country.

COLLEGE FACULTY WANT TO BECOME BETTER EDUCATORS

National surveys of adjunct and other faculty report a strong commitment to their work and a desire for quality professional development. The HERI Undergraduate Teaching Faculty Survey found that "faculty are also highly committed to promoting their students' ability to write effectively [and that they] . . . believe it is their job to prepare students for employment after college" (Eagan et al., 2014, p. 5). A national survey conducted by Hart Research Associates (2015) of 1,000 higher education faculty found that 9 in 10 believe that professional development is important to their careers and would help raise student outcomes. While university teaching centers provide some professional development, these centers rarely get the funding or have the visibility necessary to play an important role in an institution's overall student success strategy. Nor do they typically have access to high-quality and scalable resources. In its recent report, EAB (2016) stated that "pedagogical innovations shown to improve student success are abundant on many campuses, but instructors often lack the training or the support needed to replicate those innovations" in the classroom (p. 3). The Coalition on the Academic Workforce (2012) has found that available professional development is minimal, particularly for those not on the tenure track. The same is true for tenured professors, who often must pick up instructional skills on the job. Higher education assumes—incorrectly—that an expert in a discipline can effectively teach it, too.

It is a struggle to think of any other profession where employees receive so little support in work that is central to the profession's mission.

The result is that, although college educators want to improve and some are gradually diversifying their techniques, over 50% of faculty continue to rely heavily on teacher-centered practices like lecturing and dictating notes—formats that contradict the principles of learning (Eagan et al., 2014). In a study of doctoral students, Robinson and Hope (2013) stated that "with regard to preparation to teach in higher education, not much has changed" (p. 4). They concluded by arguing that "there is a need for training in pedagogy for those who teach in higher education" (p. 10). It is a struggle to think of any other profession where employees receive so little support in work that is central to the profession's mission. This lack of pedagogical training is particularly striking at a time when high-quality teaching is what most students expect from the college experience and in light of the latest research from the learning sciences.

STUDENT OUTCOMES AND FACULTY PROFESSIONAL DEVELOPMENT ARE RELATED

Professional development for primary- and secondary-level teachers has long been understood as central to improving teacher satisfaction, classroom instruction, and student achievement (Cohen & Hill, 2000; Corcoran, Shields, & Zucker, 1998; Darling-Hammond & McLaughlin, 1995; Elmore & Burney, 1997; National Commission on Teaching & America's Future, 1996; Wayne, Yoon, Zhu, Cronen, & Garet, 2008; Yoon, Duncan, Lee, Scarloss, & Shapley, 2007). Despite overwhelming evidence that quality instruction leads to improved student outcomes, faculty instructional development has historically been a low priority among efforts to reduce student attrition (Beal & Noel, 1980). According to Clifton, Hamm, and Parker (2015), "There has been considerably more talk than action largely because the incentives are larger for conducting research and obtaining research grants than for teaching undergraduate students" (p. 12). When administrators at 947 colleges and universities were asked "What makes students stay?" the top two responses were

"caring faculty and staff" and "high-quality teaching." Yet professional development at these institutions ranked 12th in their retention efforts (Beal & Noel, 1980). As EAB (2016) pointed out

> Progressive institutions are increasing the ranks of great instructors on their campuses—leveraging entrepreneurial faculty and instructional design staff to reward and expand great teaching. But many schools still face "the perpetual pilot problem"—the tendency for institutions to invest heavily in small, singular experiments, but ultimately fail to inflect the larger pedagogical culture on campus. (p. 6)

However, evidence indicates that coordinated, systemic professional development efforts at the postsecondary level are related to improved student outcomes, including higher retention and graduation rates, as well as greater faculty satisfaction, engagement, and sense of belonging (Alfano, 1993; Fulton, Noonan, & Dorris, 2004; Gansemer-Topf, Saunders, Schuh, & Shelley, 2004; Gansemer-Topf & Schuh, 2004; Killion, 2000; Murray, 2002; Outcalt, 2002; Sherer, Shea, & Kristensen, 2003). In a study of spending patterns at higher education institutions, universities and colleges that were identified as highly effective (based on graduation rates and scores on the National Survey of Student Engagement) spent more money per student on instruction and academic support, a category under which most institutions report resources dedicated to faculty development, teaching and learning centers, and other academic support staff (Gansemer-Topf et al., 2004). As Gansemer-Topf and Schuh (2004) noted, "The evidence also indicates that higher expenditures for instruction and academic support are linked to higher retention and graduation rates. That is, such expenditures improve graduation and retention rates" (p. 11). Results have indicated that instructional and academic support expenditures are significant predictors of graduation rates. These results support Tinto's theory by explaining approximately half of the variance in persistence and graduation rates among the institutions included in the study. In other words, resources dedicated to improving instruction, such as professional development, are linked to improved retention and graduation rates (Gansemer-Topf et al., 2004; Gansemer-Topf & Schuh, 2004). Other related studies have demonstrated the significant growth in student performance associated with instructor participation in professional development (Condon et al., 2016), particularly in online offerings (Cho & Rathbun, 2013; Rienties, Brouwer, & Lygo-Baker, 2013).

In their study of the impact of faculty development initiatives at Carleton College and Washington State University, Condon et al. (2016) found that "well-designed faculty development programs can contribute to teaching in ways that elicit better student work around core institutional learning goals" (p. x). Their conclusion was drawn from key evidence: (a) interviews with faculty who had participated in professional development programs, (b) a collection of the faculty members' syllabi, assignments, methods, grading scales, and, in one instance, classroom observations, and (c) work produced by their students, which was assessed using rubrics aligned with institutional learning goals. At both Carleton College and Washington State University, Condon et al. (2016) found that the more well-designed faculty development opportunities instructors participate in, the more likely they are to adopt a new perspective on teaching and learning, to strive to continually improve their practice, and, ultimately, to improve student learning. Most notably, they found that the impact of faculty development on teaching is measurable, and it results in substantial changes in classroom instruction and significantly better student work.

Beyond student outcomes, faculty development initiatives are shown to foster community, develop professionalism, and meet the needs of diverse learning styles and goals (Murray, 2002; Outcalt, 2002). Online staff development can help connect faculty members, regardless of whether they are geographically dispersed or located on traditional campuses (Sherer et al., 2003). By increasing collaboration and broadening perspectives, online professional development has allowed

Coordinated, systemic professional development efforts at the postsecondary level are related to improved student outcomes, including higher retention and graduation rates, as well as greater faculty satisfaction, engagement, and sense of belonging.

participants to "exchange ideas and resources with their colleagues, engage in collaborative work, and interact with fellow students and the instructor, a mentor, or an online learning coach at virtually any time" (Killion, 2000, p. 42).

In an examination of community colleges' efforts to integrate part-time faculty into the college community with full-time instructors, Grubb (1999) found that faculty isolation is a serious obstacle to teaching: "Except in a small number of exemplary institutions, most instructors speak of their lives and work as individual, isolated, lonely" (p. 49). Nellis, Hosman, King, and Armstead (2002) found that web-mediated staff development helps faculty work together by addressing perennial problems with face-to-face development, including part-time faculty time and geography constraints. As Alfano (1993) contended in his study of community college faculty, "Professional development programs allow the community college faculty to establish links with professional colleagues, to modify and improve instructional material and delivery, and to keep the spark of enthusiasm alive for themselves and their students" (p. 74).

STUDENT ATTRITION AND DELAYED GRADUATION ARE COSTLY

A college education is more critical and more valuable than ever. While it is true that numerous factors may influence the decision to leave an institution, once the student chooses not to return, the costs are substantial. A central concern related to student retention, attrition, and delayed graduation is the financial consequence that results when students graduate late or drop out altogether. In a comprehensive study of college attrition costs, Raisman (2013), of the Education Policy Institute, examined the relationship between attrition and annual lost revenue at 4-year public, private, and for-profit colleges and universities. Of the 1,669 colleges and universities examined, the collective lost revenue due to attrition was $16.5 billion. The largest estimated revenue loss for a single school was $103 million, while the smallest single loss was $10,000. The average revenue loss per school was nearly $10 million (Raisman, 2013). Even though the annual cost of public schools is significantly lower than private schools, losses were greater among public schools. While publicly assisted colleges and universities averaged $13 million in lost revenue, the average private college or university averaged $8 million in lost revenue. For-profit schools noted a similar average loss of $8 million. These figures do not include the costs of acquiring or replacing a student, which Raisman (2013) stated was $5,460 per student.

This estimate is in contrast to an analysis by Noel-Levitz (2011), a noted higher education consulting firm, which estimated the 2011 per-student recruiting cost at $2,185 for 4-year private institutions and $457 for public 4-year institutions. Regardless of the discrepancy between these two estimates, the price of recruiting a single undergraduate is growing substantially (Complete College America, 2014).

A similar study by the American Institutes for Research estimated that of the 1.1 million full-time students who entered college in 2002, the 500,000 students who failed to graduate within 6 years cost a combined $4.5 billion in foregone income and federal and state income taxes (Schneider, 2010). What is so striking about this estimate is that it represents a single cohort. In other words, losses of this magnitude are incurred annually by each and every graduating class. The same report calculates that over a 5-year time frame, states appropriated over $6.2 billion to colleges and universities to help pay for the education of students who failed to return to school for a second year. In terms of direct student support, over $1.4 billion in state grants and $1.5 billion in federal grants were appropriated to support students who did not return to their institution for a second year. Combining both state appropriations and state grants over the last 5 years, California leads the list with close to $500 million in state monies going to first-year-only students. New York and Texas are also near the $500 million mark (Schneider, 2010).

Beyond the issue of student retention is the alarming data on on-time graduation rates. Only 50 out of the more than 580 public 4-year institutions in America report on-time graduation rates at or above 50% for their first-time full-time students (Complete College America, 2014).

Only 50 out of the more than 580 public 4-year institutions in America report on-time graduation rates at or above 50% for their first-time full-time students.

At public 4-year universities identified as flagship research institutions, only 36% of full-time students graduate on time. For nonflagship institutions, the number is even more concerning: Only 19% of full-time students graduate on time (Complete College America, 2014). The costs associated with late graduation are considerable: An extra year costs $22,826 in tuition and fees, room and board, books and supplies, transportation, and other expenses. In addition, there is an opportunity cost of over $45,000 in lost wages. In total, the cost associated with late graduation at a public 4-year university is $68,153 per student per year. At public 2-year institutions, the statistics are even more striking. Only 5% of full-time students pursuing associate degrees graduate on time. This translates to an extra cost of $15,933 in tuition and fees, room and board, books and supplies, transportation, and other expenses; and approximately $35,000 in lost wages. That equates to a total annual cost of $50,933 for a delayed graduation from a 2-year institution (Complete College America, 2014). Finally, borrowers who do not graduate on time take on far more debt in years 5 and 6. Two extra years on campus increase debt by nearly 70% among students who borrow to finance their education, according to data from Temple University and The University of Texas at Austin (Complete College America, 2014).

CONCLUSION

In today's complex higher education climate of increasing accountability, decreasing budgets, and a more diverse student population, millions of students enter college unprepared. A well-established and growing body of empirical evidence confirms that high-quality teaching increases student retention, decreases student attrition and delayed graduation, and improves overall student outcomes. However, the reliance on adjunct faculty has increased substantially, and, on a majority of campuses, adjunct faculty receive little, if any, formal preparation or professional development in effective teaching practices. National surveys of higher education faculty indicate that, although college educators want to improve, over half of college instructors continue to rely heavily on teacher-centered practices like lecturing.

Institutions wondering whether faculty development is a good investment can take heart that these efforts result in substantial changes in teaching across a campus.

Research shows that professional development opportunities can positively impact teaching practices and student retention. Thoughtfully designed faculty development "definitely yields great value—more and more so when the development efforts are so coordinated as to encourage a productive culture of teaching and learning on campus" (Condon et al., 2016, p. 112). The tremendous costs associated with student attrition and delayed graduation are well-known. There is no doubt that today's students need great instructors now more than ever. Not surprisingly, improving retention and graduation rates is a primary goal of higher education institutions. Institutions "wondering whether faculty development is a good investment can take heart that these efforts result in substantial changes in teaching across a campus. Funding devoted to faculty development bears fruit in improved teaching" (p. 71). Given the overwhelming body of evidence that establishes links between quality faculty professional development, effective teaching, and higher student retention rates, it is clear that higher education institutions working to improve student outcomes must invest in the professional development of their faculty as a fundamental part of their overall strategic plan for student success.

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