


6-2007

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The Importance of Effective Instruction in Determining Student Success: Background for Defining the Role of Faculty Development at UNM

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June 2007**

Introduction

The University of New Mexico, like many colleges and universities, has recently explored, with renewed vigor, initiatives to improve retention, persistence, and graduation of its undergraduate students. These efforts are most clearly embodied in the Report of the Graduation Task Force (2006), which drew its organization from Adelman (2006). Recommendations in this report were culled from a larger number of ideas originating in contributing subcommittees. These recommendations are thoughtful proposals drawn from both the research literature on student success along with data and anecdotal evidence from UNM. The role of instruction, and particularly of faculty development to improve instructional effectiveness, was a relatively small part of the task force recommendations, although the Academic Success Sub-Committee report to the task force describes additional ideas.

The purpose of this briefing report is to summarize the research literature that documents the importance of effective instruction for student success as a premise for future planning, including but not limited to faculty development, that strives to improve UNM student success. The report is not intended as an exhaustive review of literature but instead draws from several recent synthesis studies (e.g., Pascarella and Terenzini, 2005; Kuh et al., 2005a, 2006a, 2006b; Cruce et al., 2006; Engle and O'Brien, 2007; and reports commissioned for the 2006 National Symposium on Postsecondary Student Success published by the National Postsecondary Education Cooperative at the U.S. Department of Education and summarized by Ewell and Wellman, 2007) This report emphasizes background information rather than actual policy proposals that might relate instructional effectiveness and faculty development to student success.

The key conclusions, based on this review, are:

1. Classroom instructional effectiveness is widely viewed as a core ingredient in planning for student success.
2. Faculty development is essential in order to improve instructional effectiveness.

Defining Success

Student success can be simply defined as the completion of a college degree. However, the research on successful outcomes of undergraduate education commonly encompasses broader definitions of success. For example, from an extensive review of the relevant literature, Kuh et al. (2006a) define student success as “academic achievement, engagement in educationally purposeful activities, satisfaction, acquisition of desired knowledge, skills and competencies, persistence, attainment of educational objectives, and postcollege performance.”

Of particular relevance to this report, Braxton (2006) defines eight indicators of college student success (Figure 1): academic attainment, acquisition of general education, development of academic competence, development of cognitive skills and intellectual dispositions, occupational

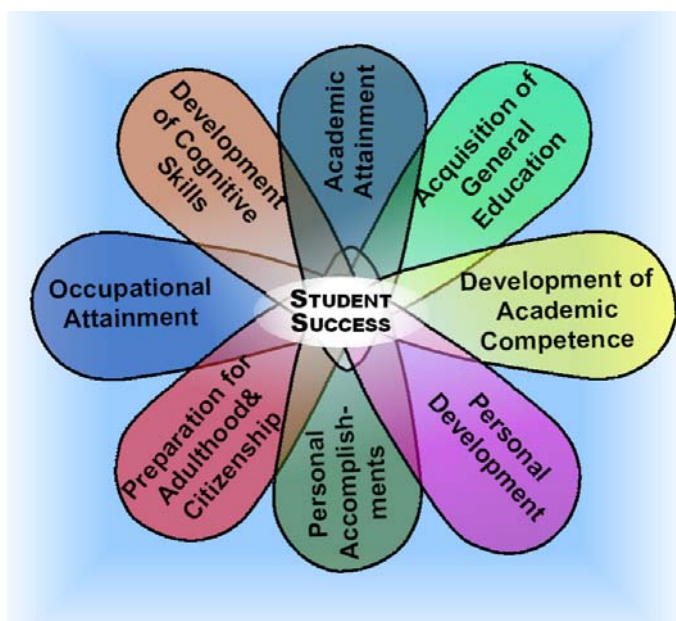


Figure 1. Diagrammatic representation of the indicators of student success, based on Braxton (2006)

attainment, preparation for adulthood and citizenship, personal accomplishments, and personal development. Of these eight indicators, academic attainment refers explicitly to degree completion, whereas acquisition of general education, academic competence, and development of cognitive skills and intellectual dispositions are typical outcomes that are evaluated in giving students their degrees, and occupational attainment is a student and institutional goal resulting from degree completion. Notably, the first six indicators, explicitly, and the last two, implicitly in some disciplines, relate directly to students' experiences in the classroom.

The Institutional Challenges to Improve Student Success

The Lack of a Universal Institutional Pathway to Success

Many variables are known to contribute to undergraduate success, including pre-college preparation and affordability issues determined by family income. The best predictors of whether a student will graduate are academic preparation and motivation (Adelman, 2004; Pascarella and Terenzini, 2005). There are also very strong correlations between family income and graduation rates (Engle and O'Brien, 2007). When universities assess what *they* can do to increase student success it is apparent that "the trajectory for academic success in college is established long before students matriculate" (Kuh et al., 2006a).

In spite of decades of research on student retention and attrition, a universal model has not emerged to guide institutions to higher levels of student success. Access to higher education has increased, there is a decrease in gaps between some groups, but the completion rates generally, as well as gaps between completion rates of high- and low-income students, have not changed, and may have widened over the past 10 years (Tinto and Pusser, 2006; Perna and Thomas, 2006).

The Double-Edged Sword of Engagement

Kuh et al. (2005a) pose the question, "Because admitting only the most talented and well-prepared students is neither a solution nor an option, are there other promising approaches to enhancing student success?" To which, they offer the answer: "Decades of research studies on college-impact and persistence suggest a promising area of emphasis: Student engagement." This research has been particularly well summarized by Pascarella and Terenzini (2005) who conclude that what students do during college generally matters more to what they learn, their motivation to learn, and whether they persist to graduation than who they are or even where they go to college.

Engagement has two key components. The first is the amount of time and effort that students put into their studies and into co-curricular experiences that promote the outcomes that constitute student success. The second component is the ways an institution allocates its other resources and organizes learning opportunities and services to encourage students to participate in and benefit from such activities (Kuh et al., 2005b).

Researchers and administrators emphasize engagement as critical for student success because there are limits to what colleges and universities can realistically do to help students overcome years of educational disadvantages. However, institutions can foster greater levels of student engagement and success by following promising policies and effective educational practices that are suggested from research.

However, two potential impediments exist to successful institutional implementation of programs that enhance engagement. First, simply offering various programs and services does not foster student success. In examining what sets apart colleges and universities with high rates of retention, persistence, and graduation, Kuh et al. (2005a) demonstrate that engagement opportunities at these institutions are not unique. What is important is that the programs and practices are tailored to the students they are intended to reach, be of high quality, and actually touch large numbers of students in a meaningful way (Kuh et al., 2005a).

The second problem is that not all students may have ready access to these programs. Traditionally, many universities increase engagement primarily through expansion of co-curricular opportunities, including academic-support services to assist students to succeed in their classes. However, low-income students typically have financial needs that increase their work burden and may limit their academic and social integration on campus (Engle and O'Brien, 2007). At UNM, for example, roughly 25% of freshmen and 40% of seniors are employed off campus 20 or more hours each week. In addition, first-generation students commonly are unaware of programs and services on campus or do not understand the functions of these programs that could benefit them (Engle and O'Brien, 2007). Given their obligations to jobs and family, the classroom may be the only place on campus where many students meet other students and faculty. "If engagement does not occur there, it is unlikely to occur at all" (Tinto and Pusser, 2006), which implies greater reliance on classroom time, rather than extra-curricular and co-curricular activities, to engage students for success.

An additional consideration, advocated by Rendón (2006), is that many low-income, first-generation students benefit from validation, which differs from engagement. The concept of engagement assumes that students take the initiative to get involved on a campus that offers services and programs that benefit them. However, validation does not assume students can form these connections on their own and expects college faculty and staff to reach out to students to assist them to learn more about college, believe in themselves as learners, and have a positive college experience.

The Pivotal Role of Faculty in Student Success

Why Instruction is the Most Important Aspect of Engagement

The importance of effective instruction to student success is best stated in the words of those who have long researched the success topic and reviewed the extensive literature.

Student learning is central to student success and by extension that without learning, students are not successful regardless of whether or not they persist. A model of institutional action, whatever its final dimension, must therefore treat student learning as part and parcel of the process of student success, and that success, however it is defined and measured, must have at its core success in individual classes. Though student success is indeed everyone's business, it is the business of faculty in particular (Tinto and Pusser, 2006).

Widespread use of effective pedagogical practices must be at the core of any agenda to promote student success (Kuh et al., 2006a).

Given that learning outcomes relate to at least six, and arguably all eight of Braxton's (2006) indicators of student success (Figure 1), and that co-curricular engagement opportunities are not

fully realized by low-income, first-generation, and/or minority students (Tinto and Pusser, 2006; Rendón, 2006; Engle and O'Brien, 2007), then it becomes apparent that instruction is the most reliable aspect of engagement. "Nowhere is [engagement] more important than in the classroom...learning is central to the college experience and the root source of student success. Involvement in classroom learning, especially with other students, leads to greater quality of effort, enhanced learning, and, in turn, heightened student success. Even among students who persist, those who are more involved in learning, especially with other students, learn more and show greater levels of intellectual development" (Tinto and Pusser, 2006).

Pedagogies of Engagement

The scholarship on teaching and learning overwhelming reveals that the passive lecture format, where instructors do most of the talking and students listen, is contrary to almost every sociological, psychological, and neurological principle of what defines an optimal learning environment. In addition, student attendance and success in classes is strongly tied to motivation (e.g., Smilkstein, 1989; Brewer, 2005). At least one study (Brewer, 2005) shows that lectures top the list of teaching activities that fail to motivate students. Rather, active and collaborative learning approaches feature three elements that matter to student learning and motivation to learn: Involving students, increasing their time on task, and taking advantage of peer influence (Kuh et al., 2006a, Forsyth and McMillan, 1991; Pintrich, 2003).

Active learning includes any class activity that involves students in doing things and thinking about the things that they are doing. Collaborative learning, in this context, refers to any activity that requires students to work together and talk to one another as a part of the learning experience. Class and peer discussions, debates, role-playing, and pair/group work are good examples of active and collaborative learning. These pedagogies of engagement substantially enhance student-processing skills, relative to lecture classes, while not diminishing content acquisition (Tinto and Pusser, 2006). Importantly, these methods are applicable to large-enrollment lecture-hall classes as well as small seminars, and can be integrated with or built from an instructor's previous experience with a lecture-focused course (deWinstanley and Bjork, 2002).

The National Survey of Student Engagement (NSSE) groups survey items regarding effective education practice into five clusters (Kuh et al., 2005a):

- Level of academic challenge
- Active and collaborative learning
- Student interactions with faculty members
- Enriching educational experiences
- Supportive campus environment

While active and collaborative learning forms a distinct cluster, implementation of these teaching techniques also increases the level of academic challenge (compared to lecture and memorization focused courses), interactions of students with one another and with faculty, and provide richer educational experiences. Notably, higher student-response scores in all five clusters correlate positively with higher 4-year and 6-year graduation rates (Kuh et al., 2006a). Other studies show that classroom activities where students are intellectually challenged, are learning new things, and are given stimulating assignments are the most important influences on student growth, motivation to learn, and satisfaction (Kuh et al., 2006a).

Interactions of students with one another and with faculty are key components of student success and engagement, and can be accomplished in the classroom through active and collaborative learning. Tinto (1993) concluded that the two major reasons that freshmen drop out of college are failure to establish a social network of friends and classmates and failure to become academically

involved in classes. Astin's (1993) study of 27,064 engineering students at 309 institutions found that interaction among students and interaction between faculty and students carried by far the largest weights and affected more general education outcomes than any other environmental variable, including content. Pedagogies of engagement enhance these critical socialization links.

Use of instructional technology can be an important part of engaging pedagogy, as reviewed by Kuh et al. (2006a). Students who report that their instructors require the use of information technology or commonly use it in their class are more likely to report frequently working in groups outside of class. Some evidence further suggests that courses redesigned to infuse instructional technology have made the teaching and learning enterprise more active and learner centered, while also creating more open, inclusive learning environments.

Pedagogies of engagement overlap considerably with the well-known seven principles of good practice in undergraduate education (Chickering and Gamson, 1987) that also correlate to student success. Cruce et al. (2006) present consistent evidence, based on surveying freshmen, that these principles have a significant positive impact on the cognitive development, learning orientations, and educational aspirations of students. Furthermore, their study provides evidence that these good practices have a compensatory effect for those students who enter college below the average on measures of cognitive ability or orientation to learning. A key corollary is that multiple teaching approaches are required to engage and enhance the success of diverse learners. The greater the repertoire of teaching methods, the more effective the learning experience, especially when teaching approaches are aligned with student abilities, and preferred learning styles and learning aims (Kuh et al., 2006a).

All of this research leads to the conclusion that great payoffs in terms of student outcomes occur when emphasis is placed on pedagogy and other features of the educational delivery system. As summarized by James Duderstadt, past President of the University of Michigan:

“It could well be that faculty members of the twenty-first century college or university will find it necessary to set aside their roles as teachers and instead become designers of learning experiences, processes, and environments.”

Relating Pedagogies of Engagement to Success of Diverse Student Populations

“It now appears that all traditionally taught college courses are markedly (though unintentionally) biased against many non-traditional students, and, indeed, against most students who have not attended elite preparatory schools. Thus, when we teach merely in traditional ways we probably discriminate strongly on grounds quite different from those we intend. Easily accessible changes in how we teach have been shown repeatedly to foster dramatic changes in student performance with no change in standards.”

- Nelson, 1996 (emphasis added)

Instruction that moves away from lecturing and assessment of rote memorization to active, collaborative learning focused on higher-level cognition also enhances the success of those students whose success is our greatest concern. For example, students who scored below 990 on the SAT gain more from active and collaborative learning activities than their counterparts who scored greater than 1300 (Kuh et al., 2006a). While exposure to educationally effective practices is associated with desired outcomes for all students, historically underserved students benefit more from engaging in these activities than White students in terms of earning higher grades and persisting to the second year of college (Figure 2; Kuh et al., 2006b).

Hand in hand with pedagogies of engagement is building and assuring inclusiveness. A key element of this approach is adopting a talent-development philosophy that every student can learn under the right conditions. Given the growing diversity of student populations, individual faculty

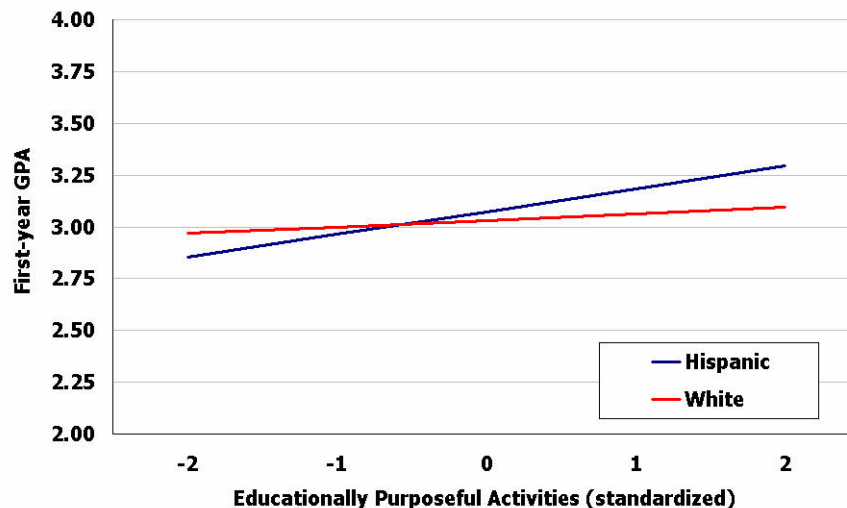


Figure 2. Using NSSE data, Kuh et al. (2006b) show that Hispanic freshmen grades are more positively enhanced by educationally purposeful activities than are grades for White, non-Hispanic students. Educationally purposeful activities are a summative scale of 19 NSSE items that measure student interaction with faculty, their experiences with diverse others, and their involvement in active and collaborative learning. All of the educationally purposeful activities directly or indirectly relate to instructional choices made by faculty. Note, too, that Hispanic students achieve lower grades than White students when this level of these activities is low.

increasingly are not instructing homogeneous classrooms of students with similar backgrounds and who, therefore, learn in the same way and with the same cultural perspectives and ways of knowing as the instructor. Because faculty members often misunderstand, ignore, or devalue the talents of students from diverse backgrounds, these learning style differences can be inappropriately viewed as academic deficiencies in need of remediation (Kuh et al., 2006a). Students' views of their abilities can be altered by structuring early learning experiences in a new subject by starting with what students are good at and what is within their context of knowing.

Inclusive pedagogical strategies such as learning communities, active learning, and connecting content to students lives or "real work" experiences make a difference for low-income, first generation students (Rendón, 2006). First-generation students who report more participation in group discussion, presentations, performances, research projects, and group projects, and who more frequently discuss courses with other students, have a higher probability of success (Kuh et al., 2006a). Not only can these approaches foster engagement but they also can be linked to validation strategies (Rendón, 2006). Validation activities in the teaching and learning context include calling students by name, working one on one with students, praising students, providing encouragement and support, encouraging students to see themselves as capable of learning, and providing vehicles for students to support and praise each other. These validation actions can produce "transformational changes" in students, accompanied by increased interest and confidence in their capacity to learn (Kuh et al., 2006a).

The Importance of Faculty Development

"Most ... faculty have paid little if any attention to the empirical and theoretical studies that ask what methods of teaching are most effective either generally or for particular groups. Neither is the question of how well one's teaching is working typically seen as meriting much investigation. Rather, the tendency is to continue to teach as we were taught, resisting any suggestions that traditional approaches might be less than optimally effective or that they might be biased in favor of particular groups. Typically, any evidence of less than optimal learning is attributed to a lack of student effort or insufficient prior preparation, thereby letting the faculty member off the hook."

- Alters and Nelson, 2002

Faculty members tend to teach as they were taught and, since these methods “worked” for them, faculty also tend to be skeptical of claims that student success would be enhanced by adoption of different approaches. “One of the ironies of higher education is that the faculty, as a matter of practice, are the only faculty in education from elementary school to college that are literally not trained to teach their own students. It is for this reason that faculty development is a critical part of any long-term institutional strategy to increase its capacity to promote students’ success” (Tinto and Pusser, 2006). Kuh et al. (2006a) confirm that advice by stating that “Widespread use of effective pedagogical practices must be at the core of any agenda to promote student success.” These authors make this recommendation based in part on their detailed study (Kuh et al., 2005a) of universities and colleges with unusually strong graduation rates; faculty development programs at these institutions have resources to help achieve instructional change on their campuses.

Another aspect of faculty development is to apprise instructors of their role in leading students to out-of-classroom engagement. At most of the institutions with high retention, persistence, and graduation rates, students can rely on faculty to serve as “first responders” to their needs in a variety of academic and non-academic support services (Engle and O’Brien, 2007). As reviewed above, low-income and first-generation students generally underutilize these services, so faculty awareness can be a critical link for students to engage with these opportunities.

Linking Instruction to Student Success

The model of institutional action proposed by Tinto and Pusser (2006) provides an appropriate summation of this report. Tinto and Pusser, in reviewing theories of student success propose categories of action, rather than specific types of action. Their model of institutional action for student success has these ingredients:

- “First, it sees effort and learning as central to student success.
- Second, it argues that student success is built up one class at a time; places the classroom at the center of institutional efforts to promote student success.
- Third, our model places great importance on the role of faculty development, especially as it relates to the development of pedagogies, curricula, and assessment practices, and the capacity of the institutions to empower faculty to construct classrooms in which students become actively involved in learning, learn, and in time succeed.”

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