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Learning at a Distance: Engaged or Not?

by Pu-Shih Daniel Chen, Robert Gonyea, and George Kuh

Distance learning is the fastest growing segment of postsecondary education. Almost 3 million students took at least one online course in fall 2005, an increase of more than 800,000 over the previous year (Allen and Seaman 2006). At the same time, questions persist about the quality of online learning. In one recent study, about two-fifths of senior academic officers at U.S. degree-granting higher education institutions expressed a belief that distance learning is inferior to face-to-face learning (Allen and Seaman 2006). Although some studies show that distance education learners benefit from their experiences to the same degree as campus-based learners (Dutton, Dutton, and Perry 2002; Neuhauser 2002), most of the work demonstrating positive outcomes in distance learning has focused on older students, who are often more motivated and have the self-discipline to manage effectively the unstructured nature of the distance learning environment (Dibiase 2000; Hardy and Boaz 1997).

One important unresolved issue related to the quality of the learning experience is the degree to which online learners are engaged in their educational activities relative to campus-based learners. Engagement is positively related to a host of desired outcomes, including high grades, student satisfaction, and persistence. For this reason, such activities as student-faculty interaction, peer-to-peer collaboration, and active learning are thought to be important in both face-to-face and online learning environments (Brown 2006; Chickering and Gamson 1987; Graham et al. 2001; Pascarella and Terenzini 2005; Richardson and Swan 2003). Lee Shulman, the president of the Carnegie Foundation for the Advancement of Teaching, asserts that because student engagement is a precursor to building knowledge and understanding, it is both a proxy for learning and a desired outcome in itself (2002). By being engaged, students develop habits of the mind and heart that promise to stand them in good stead for a lifetime of continuous learning.

This study compares the engagement of distance learners in educational practices with that of their campus-based counterparts at U.S. four-year degree-granting colleges and universities. We were specifically interested in addressing three questions:

1. Why do distance learners take online courses?
2. What are the engagement patterns, self-reported learning and personal development outcomes, and satisfaction levels of distance learners versus campus-based learners?
3. What are the engagement patterns, self-reported learning and personal development outcomes, and satisfaction levels of traditional-age (24 years old and younger) versus adult (older than 25 years) distance learners?

For purposes of this study, distance learners were defined as first-year or senior undergraduate students who took all of their courses via the Internet in the spring term of the 2005-2006 academic year.

Methods

The data for this study come from 189,325 randomly sampled first-year and senior students who completed the National Survey of Student Engagement (NSSE) in 2006. The NSSE is administered yearly to randomly selected first-year and senior students at participating institutions. Participation is entirely voluntary, both for the instutions and for the individual students; institutions pay a fee to participate (NSSE 2007). Since the inception of the NSSE in 2000, more than a million first-year students and seniors at more than 1,100

four-year colleges and universities have reported the time and energy that they devote to the educationally purposeful activities measured by the annual survey. Participating institutions use their student engagement results to identify areas where teaching and learning can be improved. NSSE results are positively correlated with such desired outcomes as critical thinking and higher grades (Carini, Kuh, and Klein 2006; Kuh 2004; Ouimet et al. 2004; Pike 2006). The conceptual framework and psychometric properties of the NSSE and the development of NSSE scales have been amply documented (Kuh 2004; Nelson Laird, Shoup, and Kuh 2006).

In 2006, 557 four-year colleges and universities participated in the NSSE. To identify distance learners, one question was added to the 2006 Web version of the survey: "Thinking about this current academic term, are you taking all courses entirely online?" The 3,894 students at 367 American four-year colleges and universities who answered "yes" to this question comprised the distance learner respondents for this study (Table 1). Of these, about 33% (1,279) were first-year students and 67% (2,615) were seniors. These students were compared with 91,097 first-year and 94,334 senior campus-based students attending the same institutions.

To distinguish traditional-age distance learners from adult learners, student age was derived from the self-reported birth year given in the survey. Almost two-thirds of distance learners (64%) were 25 years of age or older and labeled "adults" in the study; about a third (35%) were 24 years old or younger, falling in the "traditional age" range. Twenty-three (0.6%) distance learners did not report their birth years and could not be categorized for this part of the analysis.

In addition to the core 2006 NSSE instrument, 35 institutions agreed to ask 14 additional questions that further explored the issue of online learning. Among these were seven items asking distance learners to report their level of agreement with statements describing reasons for taking online courses (Exhibit 1). Data on these items were collected from 791 distance learning students.

We answered the first research question with descriptive statistics from the additional survey questions. To answer the remaining research questions, we conducted two multivariate analyses of covariance (MANCOVA) comparing (a) distance and campus-based learners and (b) traditional-age and adult distance learners. Specifically, to answer the second research question, the independent variable in the MANCOVA was the student's distance education status; distance education learners were coded 1, and campus-based students, 0. The dependent variables were the five NSSE benchmarks of effective educational practice, three measures of deep learning, three self-reported gains scales, and an overall measure of satisfaction with the college experience (Exhibit 2). All of the dependent variables were scored on scales ranging from 0 to 100. Because our past research has shown that full-time students and female students are significantly more engaged than part-time and male students respectively (Kuh 2001, 2003), we controlled for the influence of these two variables in the analysis. We did not include age as a covariate because a very high percentage of older students are also part-time students; thus, entering age and enrollment status together is somewhat redundant and introduces a potential multicollinearity problem. The MANCOVA to address the third research question used the same dependent variables and covariates. However, only distance learners were included in this analysis with adult learner (1) or traditional-age (0) being the independent variable.

Results

Descriptive analyses confirmed what others have noted (Dutton, Dutton, and Perry 2002): Distance and campus-based learners differ in their biographical and academic characteristics (Table 2). More than two-fifths (44%) of first-year and half of the senior distance education learners were enrolled part-time compared with only 4% of first-year and 13% of senior campus-based learners. Distance learners also were older, with median ages of 25 and 32 for first-year students and seniors, respectively, compared to 18 and 22 for campus-based first-year and senior students. More distance learners reported earning A or A- average grades than campus-based students. Also, distance learners spent more time caring for dependents (Figure

[1](#)) and working off campus ([Figure 2](#)).

When asked why they were taking online courses, nearly all distance learners (96%) cited the convenient schedule of these course offerings ([Figure 3](#)). Sizeable majorities also indicated that they preferred to work at their own pace (77%) and learn on their own (70%). A third of the learners (35%) reported taking online courses because they did not live near enough to colleges that offer the desired courses, and a fifth of the learners (21%) said that they were seeking less expensive college alternatives. About one in four distance learners (27%) preferred taking courses in this format because they felt that other online learners were more likely to be the same age. Only 8% thought that the grading for online courses would be easier than that for campus-based courses.

The MANCOVA results ([Table 3](#)) and descriptive statistics ([Table 4](#)) show that distance learners generally scored higher on the student engagement and outcomes measures than their campus-based counterparts. For example, distance learners reported experiencing higher levels of academic challenge (on a scale measuring the amount of reading, writing, and higher-order thinking activities students engaged in and the amount of time spent studying) and reflective thinking (a component of deep learning that asks students how often they critically examined their own views, considered the views of others, and adapted their thinking on a topic). They also reported that they gained more in terms of practical competence (e.g., career skills, interpersonal skills, and technological proficiency) and in personal and social development (e.g., developing values and ethics, understanding people from diverse backgrounds, and self-understanding), and they were generally more satisfied with their educational experiences. First-year distance learners reported interacting more with faculty (e.g., discussing grades, ideas from classes, and career plans; receiving prompt feedback) and engaging more in enriching educational experiences, such as participating in learning communities and independent study. Senior distance learners perceived the learning environment to be more supportive than did their campus-based counterparts and reported greater gains in practical competence and personal and social development, as well as in general education (e.g., writing, speaking, analyzing quantitative problems).

In only one area of engagement, active and collaborative learning, were distance learners significantly less involved. Closer inspection of the results for active and collaborative learning ([Figure 4](#) and [Figure 5](#), respectively) shows that distance learners participate at least as often, and at times more often, than campus-based students in three activities: (a) asking questions in class and contributing to class discussion, (b) participating in community-based projects as part of a regular course, and (c) discussing ideas from readings or classes with others outside of class. However, distance learners are less engaged, on average, in two areas: (a) working with other students on projects during class, and (b) working with classmates outside of class to prepare class assignments. It seems that the online environment provides students more opportunities to be involved in active learning as individuals, but limits students' ability to collaborate with each other.

The second set of MANCOVA results ([Table 5](#)) and descriptive statistics ([Table 6](#)) indicate that older distance learners were much less likely to participate in active and collaborative learning and had fewer enriching experiences and less contact with faculty than younger distance learners. At the same time, they were more engaged in deep learning activities and reported greater gains in practical competence and general education than learners of traditional age. They were also more satisfied overall with their educational experiences.

Limitations

There are several limitations in this study. First, NSSE only surveys students enrolled at baccalaureate colleges and universities. Many distance education learners enroll in community colleges or other types of two-year institutions, so the results of this study may not apply to them. Second, although a large number of four-year institutions from a wide range of settings are represented ([Table 1](#)), institutional participation is voluntary. Thus, caution must be exercised when generalizing the results to all four-year schools.

Student participants are randomly selected by NSSE from first-year and senior classes at participating institutions; they voluntarily participate in the survey. NSSE is able to draw a nearly 40% response rate. Random sampling is widely accepted as the best method of estimating true population parameters. In addition, NSSE has studied non-respondents and so far has not found explicit evidence of non-response bias.

Discussion and Implications

The findings from this study point to three conclusions:

1. *For distance learners, postsecondary education is but one of many priorities in their lives.* Distance learners tend to be older; most work and care for dependents and enroll in online courses because such classes fit more easily into busy, demanding schedules. The top three reasons cited for pursuing learning at a distance—convenience, self-pacing, and self-directed learning—suggest that many of these students were looking to advance their education in the context of their current lifestyles. It is possible that without a distance learning option, many of these students would not be enrolled in postsecondary education at all.
2. *The engagement of distance education learners compares favorably with that of campus-based learners.* Distance learners are generally as engaged and often more engaged than their campus-based counterparts, with the exception of engagement in active and collaborative learning activities. In addition, the self-reported gains of distance learners tend to be greater than those reported by their campus-based counterparts.
3. *Older distance learners differ from younger online students in noteworthy ways.* Older students report greater gains and are more likely to engage in higher order mental activities such as analysis and synthesis as part of their studies. However, they are less involved in activities that depend on interacting with others, such as working with other students on problems or assignments.

Taken together, the findings from this study suggest that distance learning is comparable to face-to-face learning, at least in terms of student engagement in effective educational practices.

Student engagement takes many forms—intellectual challenge, active and collaborative learning, meaningful interactions with faculty, and the perception that the learning environment is supportive of the student's efforts to overcome obstacles to learning. Active and collaborative learning is the one area in which distance learners fell short of their campus-based counterparts. In part, this seems to be an artifact of activities related to group-based interactions such as working on projects during class or outside of class. These kinds of experiences are associated with desired outcomes of college such as satisfaction, persistence, and intellectual and social development.

NSSE's active and collaborative learning measure is based on teaching and learning research conducted largely in conventional, face-to-face environments. It is still unknown how effective online interactive learning activities such as discussion boards, online group work, or multimedia Web sites are compared to conventional face-to-face active and collaborative learning activities such as participating in class discussions, giving class presentations, or producing and presenting collaborative projects. More research is needed in this area to establish the literature of online active and collaborative learning and to study its effects on distance learners' college outcomes in terms of intellectual gains, persistence, and personal and social development. The NSSE project will continue to explore this area, perhaps by testing new questions that specifically target the types of learning activities that appear to be best situated in the online environment.

It is also unknown whether low levels of active and collaborative learning opportunities for distance learners negatively affect their performance in the workplace or other aspects of their lives. Because many distance

learners are older, it is possible that they have honed their ability to work cooperatively in other settings. It seems prudent, however, for distance education instructors to design learning assignments that provide opportunities for students to develop the interpersonal skills and practical competencies required by the 21st-century workplace (Association of American Colleges and Universities 2007). In fact, recent work suggests that educators and researchers are already considering these issues. For example, Dennen and Bonk (2007) recommend that instructors of online courses establish a collaborative tone and climate for the course with ice-breaking activities. To encourage active and collaborative learning, Bonk and Zhang (2006) recommend that online instructors design assignments that feature group discussion, collaborative problem-solving, case studies, group blogging, team reflection papers, and debates and suggest that assigning every student a "critical friend" in the class who provides feedback on course assignments is one way of ensuring that distance learners interact with peers.

Conclusion

While these results are promising in terms of suggesting the merits of distance learning, they also raise additional questions. For example, is distance learning attracting students who otherwise would not participate in higher education? Or would some number of students who choose the distance learning format over campus-based instruction have attended a traditional college or university anyway? Do distance learners interpret the meaning of survey questions in the same way that campus-based students do, or do some questions take on different meanings in different contexts? Finally, all the students who participated in this study are enrolled in traditional four-year institutions that offer some online course programs. None of the large fully online institutions (e.g., University of Phoenix or Western Governors University) participated. Do these programs offer a different type of online learning experience since they are independent of traditional four-year campuses? Answers to these questions and others are needed to ensure that online programs are at least comparable to campus-based programs in providing high-quality educational opportunities for students who otherwise might be excluded from postsecondary education.

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