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ABSTRACT
         This paper describes the author's research on online higher
education. Engagement, online technology, and learning are introduced as
three components of online education. The following two research questions
are presented: To what extent can we discover factors or dimensions of
learning predictive of success in online courses? and To what extent can
student achievement in online courses be improved through specific pedagogies
used in online courses? Studies, articles, white papers, and miscellany are
listed. Contains 17 references. (MES)

Can Online Technology Enhance
Student Engagement & Learning?

Implications for New Pedagogy in Higher Education

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Intro   Theory   Questions   Studies   Papers   Bibliography

Introduction

In talking to colleagues about their experience teaching online
courses, some interesting themes run through the conversations.

- First, many find that online students perform better than
  students taking the same course in a traditional on-campus
  mode from the same instructor.
- The second common experience is that faculty seem
  surprised at how well they get to know their online students.
  In fact, many find that they communicate directly with a
  higher percentage of their online students than with their on
  campus students.
- The third theme is that faculty discover their experience
  preparing and teaching online courses also improves what
  they do in the classroom; that the process of constructing
  an online course stimulates re-thinking of objectives and
  methods for the course as a whole.
- And, perhaps the most surprising experience online
  teachers share is that students who complete their courses
  consistently report that they would have preferred to have
  more face-to-face meetings with the instructor.

This implies two things: Most students take online courses
because their schedule forces them to, and students who stay in
online courses have become engaged in the course.

My research explores the "why" of these experiences, and in the
process develops empirical evidence to support these anecdotal
outcomes of online education.

Several explanations for why online students perform better have
been posed:

"Online courses are easier."

2

"Students are graded differently in online courses."

"Only mature, highly motivated students enroll in online courses."

"Only teachers who like technology teach online courses. Their own bias favors students who also like to use technology."

Is any of this true? Does it matter? What can be learned by studying current practices in online education and their impact on student learning?

Emergence of a Theory

I believe there are three pieces to this puzzle: engagement, online technology, and learning. Engagement. Given two students with similar academic profiles and interest in the subject matter, the student who becomes more engaged in a course will learn more. Online technology. Students who know how to use online tools can easily follow-up on their interest and become more deeply immersed in the subject matter, and they have more opportunities to initiate communiation with their instructors. Learning. Thus, online technology, by virtue of capitalizing on and enhancing student engagement, can improve learning.

Online technologies facilitate student exploration of a subject and facilitate communication with teachers and with other students. This allows students to direct and manage their own study of a subject beyond the boundaries of the classroom, and stimulates engagement by turning interest into action. Of course, motivated students could always do more, even before online technologies became available. And, students can still go to the library, meet with one another in study groups, and meet with their teachers during office hours. But online technologies can make this easier by allowing asynchronous and place-independent communication.

Longitudinal studies of postsecondary students suggest that a key factor in student engagement is communication with teachers outside of the classroom (Pascarella and Terenzini, 1991). With online technology, students and teachers can either meet at the same time, from different places, or they can exchange information and ideas in a common area, but participate at different times. The first technique makes use of online "chat" capabilites, while the latter uses online "conferences" or "forums." Even making use of a simpler technology, email, means that students and teachers can send and receive messages at all hours of the day and night without worrying about waking someone up or wondering if the answering machine recorded their message.

Research further suggests that certain classroom practices, combined with teacher-availability, encourage student-teacher communication (Wilson and Gaff, 1975). Inviting students to help make class plans or policy , providing opportunities for student

evaluation of the course, and encouraging student discussion send a clear message to students that their opinions matter. Discussing points of view other than yours, relating coursework to other disciplines, and discussing current events that relate to the subject give additional clues that you are interested in perspectives other than your own. And, giving essay exams and term papers instead of objective exams, and grading objectively without a curve provide further evidence to students that they are perceived as individuals and not interchangeable "student-units." This provides an important clue to why online education can be successful for students. The very nature of individual emails and requiring extensive student participation in an online course reinforces the message that the individual student is important to the instructor. This factor may have critical significance to student engagement and success in a course.

We are compelled to ask whether these kinds of communication are the same as face-to-face interactions. Obviously, they are not. But are they worse, or even harmful? This is an involved question, but a general response is that they are probably not harmful when used in addition to in-person communication. Some studies have shown, however, that relying on "faceless" communication over an extended period of time exacerbates problems among individuals who live in relative isolation. We conjecture, then, that it's safe to use online communication extensively if an individual leads a lifestyle with regular personal interactions at work or within the community.

Research Questions

1. To what extent can we discover factors or dimensions of learning predictive of success in online courses?
2. To what extent can student achievement in online courses be improved through specific pedagogies used in online courses?

Currently, my research is focusing on the multidimensional nature of student learning; the interactions between ability, motivation, personality, and learning style, and their impact on learning. Collectively, I refer to these as factors or dimensions of Cognitive Engagement. I am exploring the differences between on-campus and online student profiles and predictors for success.

The most important expected outcome of this research is discovery of an approach to advising students of effective online learning strategies based on their specific needs as defined by these factors in the context of a specific discipline.

At the moment, this research is cross-sectional. I'm looking at today's online students, who I expect to find differ from today's on-campus students in several areas. This concept is consistent with several studies of the differences between distance and traditional students (Biner, 1995; Cheng, 1995; Fjortoft, 1996).

Currently, many speculate that online students are highly motivated

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and capable learners, and attribute their success in online courses to these personal qualities rather than excellent online course design. I believe, however, that over time online student characteristics will converge with on-campus students as online technologies become ubiquitous and todays K-12 students, who are introduced to online technologies as early as the primary grades, enter higher education. When that happens, we may not find the special motivational and personality traits in online students sprruing them to success. We will need to rely more on sound pedagogy in the design and delivery of online courses and helping students select learning strategies most appropriate to their individual circumstances.

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