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## Internet and Higher Education



# From the periphery to prominence: An examination of the changing profile of online students in American higher education



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#### ABSTRACT

This study used nationally representative data and employed multinomial logistic regression to examine the changing profile of online students in American higher education. Although online education continues to become an increasingly mainstream mode of instruction, certain student groups may engage disproportionately with computer-mediated instruction. Weighted descriptive statistics revealed that the proportion of postsecondary students who enrolled in online courses increased from 5.9% in 2000 to 32.1% in 2012, with 23.6% of students enrolled in some online courses and 8.5% of students enrolled in fully online programs. Empirical evidence suggested that student characteristics associated with the highest opportunity costs of engaging with residential education—such as being a full-time employee, parent, or married—were more likely to enroll in some online courses and online-only programs. In addition, economically and socially disadvantaged students were typically less likely to engage with online education.

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#### 1. Introduction

Although colleges and universities are typically slow to adopt change in any form, many higher education institutions throughout the United States (U.S.) face considerable pressure to incorporate online education into their institutional plans. By serving as a more convenient alternative to face-to-face instruction, online education has provided new and improved ways for postsecondary students to gain access to previously unavailable educational opportunities. Online education was previously considered a niche offering intended solely for timeand location-constrained students, but it has become an increasingly mainstream mode of instruction and the main source of enrollment growth in American higher education (Sener, 2012).

Despite the growth of online education in American higher education, minimal research has examined the various student populations and institution types of online learners. Because a variety of background characteristics can influence postsecondary students' academic achievement (Pascarella & Terenzini, 1991, 2005), online learners cannot be studied as a homogenous group. In addition, student patterns of online enrollment across different institution types may have changed over time given that the purpose of online education has expanded beyond solely providing outreach for non-traditional students, such as working adults and individuals from rural populations (Altbach, Gumport, & Berdahl, 2011; Dabbagh, 2007). Surprisingly, past research examining postsecondary online learners has failed to adequately address which types of students and institutions are most engaged in online education, how both student and institutional characteristics of online learners have changed over time, and whether student and institutional characteristics vary according to the level of engagement with online education.<sup>1</sup> This study addresses the following research question: *To what extent do student and institutional characteristics of undergraduate students relate to online course enrollment decisions*? This paper also considers whether these characteristics vary according to students' level of engagement with online education.

In order to understand the importance of these questions, the financial and technological contexts associated with the rapid growth of online education in American higher education should be considered. Costs in higher education have continued to rise at a faster pace than costs in the overall economy (Bowen, 2013). In response to the financial challenges facing colleges and universities, higher education leaders have felt the pressure to increase their reliance on alternative revenue sources, such as online education. Many higher education leaders hope that online enrollments will continue to grow to the extent that new revenues exceed new costs in order to 'bend the cost curve' and potentially subsidize other parts of the institution (Deming, Goldin, Katz, & Yuchtman, 2015).

In addition, a variety of improvements in digital technology have allowed for a wider array of options for institutions of higher education

<sup>1</sup> Level of engagement with online education is examined by classifying postsecondary students as enrolled in no online courses, some online courses, or all online courses.

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considering online education. Online courses are no longer merely identical versions of classroom instruction delivered via the Internet. Technological advances allow for online courses to incorporate a variety of media and tools in their delivery, such as learning management systems, video lectures, interactive tutorials, animations, adaptive software, discussion boards, and so forth. Online courses serve as a natural response to higher education students' desire for convenience. Online alternatives to the residential classroom experience have decoupled learning and student services from time- and geographicbased constraints facing postsecondary students because online learners can be accommodated in ways that do not force them to align with rigid class times and office hours associated with the traditional collegiate experience at brick-and-mortar colleges and universities (LeBlanc, 2013).

By embracing non-traditional students, online education has been able to reach previously underserved learners whose life circumstances-such as work, family obligations, or other obstaclesprecluded their pursuit of residential postsecondary education (Sener, 2012). The logic of this dynamic can be explained by the microeconomic concept of opportunity costs, which describes the cost of doing one thing as the consequent loss of any foregone alternatives (Mankiw, 1998). For example, face-to-face education has high opportunity costs for postsecondary students who would be forced to forego employment or caregiving responsibilities, but online education would provide a substantially lower opportunity cost for those non-traditional students. Despite the potential of online education to increase access for various student populations across institution types, the vast majority of research pertaining to online education in the U.S. is not generalizable beyond individual courses or community colleges<sup>2</sup> and fails to differentiate between the residential student taking one online course and the non-traditional learner enrolled in a fully online program. As a result, the current state of research on online education has limited value for administrators and policymakers at the majority of American colleges and universities (Lack, 2013). Through an empirical analysis of national data from the U.S., this study addresses these issues by describing individual characteristics of online students, outlining how online enrollment choices vary according to institutional characteristics, and examining whether student and institutional characteristics vary according to the level of engagement with online education.

#### 2. Literature review

The notion of providing course content from a distance is not a new development in American higher education. Before online education, colleges and universities attempted to reach audiences from a distance via radio and television, but these efforts generated only limited success (Bok, 2013). In 1995, only 9% of American adults accessed the Internet. By 2010, roughly 77% of all Americans had internet access in their homes (Moore & Kearsley, 2012). Due largely to this increased access to the Internet, the audience for higher education has expanded well beyond the confines of college and university campuses. Allen and Seaman (2014) reported that the percentage of students taking at least one online course has increased from 9.6% in 2002 to 33.5% in 2012, but the authors have deferred to federal government data since 2012 (Straumsheim, 2015). The recent growth of online education in the U.S. can also be explained by the Higher Education Reconciliation Act (HERA). In 2006, HERA overturned the "50% rule" that required higher education institutions to offer no more than 50% of courses online in order for their students to qualify for Title IV federal funds. Once online students could receive equal access to federal student aid, colleges and universities, particularly for-profit institutions, offered more online courses and the alreadyburgeoning industry of online education continued to grow at an even faster pace (Mettler, 2014).

#### 2.1. Student and institutional characteristics

Pascarella and Terenzini (1991, 2005) reported that student characteristics are significant predictors of postsecondary students' college experiences and learning outcomes. As calls to provide generalizable evidence of the quality of online instruction become louder (Bowen, 2013), the changing profile of online students in the U.S. has become increasingly important given that certain student populations and institution types may engage disproportionately with online education. Postsecondary online learners no longer appear to be a homogenous group of time- and place-bound students, but increases in access through online education may only attract a select group of postsecondary students (Jaggars, 2014a). For instance, Jaggars (2012) described that community college students who enrolled in at least one online course were typically older, more likely to be employed full-time, less likely to be minorities, less likely to be low-income, and less likely to be academically underprepared when compared to those who chose to enroll solely in face-to-face courses. These findings may give credence to the 'digital divide' referenced in previous literature, which alludes to the social and economic gap between underprivileged individuals who do not have easy access to computers and their peers who do (Hoffman & Novak, 1998, 1999; Strover, 1999; Norris, 2001).

In a national study of community college students in the U.S., Shea and Bidjerano (2014) provided some student and institutional characteristics of distance learners from 2004. For instance, among students enrolled in distance educations courses at community colleges, 65.8% of distance learners were female and 66.4% were White—which represented a larger majority than the proportion of female and White students who did not enroll in distance education courses. Xu and Jaggars (2011, 2013a, 2013b) also provided descriptive demographic characteristics for students enrolled in the state of Washington's community and technical colleges from 2004 to 2009. Previous research conducted by these authors has contributed to higher education scholarship, but the scope of their findings is restricted solely to community college students.

The convenience, flexibility, and self-paced workload of online courses have been referenced as beneficial components to the likelihood of success for older and working postsecondary online students. Online education has the potential to allow adult learners to continue their educational path without experiencing negative ramifications on their employment or family obligations (Yukselturk & Bulut, 2007). Although their study was restricted to first-year and senior college students at 45 American higher education institutions, Chen, Lambert, and Guidry (2010) found that minority and part-time students were more likely to enroll in online courses. Findings by Chen et al. appear to contradict Jaggars (2012) regarding the likelihood of minorities to enroll in postsecondary online courses in the U.S., but these discrepancies highlight the need for a generalizable, cross-institutional study of the background characteristics of postsecondary online learners.

Similar to student characteristics, institutional characteristics can also impact the college experiences and learning outcomes of postsecondary students (Pascarella & Terenzini, 1991, 2005). The proportion of American higher education institutions offering online education in some form has increased from 71.7% in 2002 to 86.5% in 2012. The motivation and growth of online education varies according to institution type, but a large percentage of the proliferation of online offerings can be explained by institutions moving from offering the occasional online course to providing complete fully online degree programs to their students. Specifically, the percentage of American higher education

<sup>&</sup>lt;sup>2</sup> Community colleges are open-access, two-year institutions that typically offer twoyear associate degrees, whereas four-year colleges and universities can be open-access or selective and typically offer degrees at the baccalaureate and graduate levels.

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