

The Challenges of Leveraging Online Education for Economically Vulnerable Mid-Career Americans

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ABSTRACT

Economic and technological change has made lifelong learning more important than ever and partly explains the rise of online education, the flexibility of which appeals to mid-career Americans. Most existing online education appears to result, however, in poor learning and labor market outcomes. Promising models of low-cost, high-quality online education are only now beginning to arise. This brief lays out some of the central questions policymakers should ask when considering plans to leverage online education for economically vulnerable mid-career Americans, as well as the state of the evidence surrounding those questions. In short, existing research provides little clear evidence of successful models of online education for academically weaker students, suggesting that policymakers should proceed with caution. Any such efforts should be accompanied by rigorous, data-driven assessment and accountability systems, both to encourage pedagogical innovation and to ensure students benefit from such degrees.

1. Introduction

The rapid pace of economic and technological change has made lifelong learning—the ability to gain skills at any point in one’s career—more important than ever. Economically advantaged Americans can often get such training in the context of their current employer. Unfortunately, many of the institutions designed to help more economically vulnerable Americans with such lifelong learning are ineffective. The majority of publicly funded job training programs seem insufficiently effective to justify their costs (Barnow & Smith, 2016). Community colleges, which serve most students beyond traditional college age, have extremely low graduation rates, with fewer than 30% of those who enroll part time completing a college degree within six years (National Student Clearinghouse, 2018). Community colleges also appear to lower the degree completion rates of students who might otherwise have access to four-year colleges (Goodman, Hurwitz, & Smith, 2017).

As the importance of lifelong learning has grown and existing institutions have at least partly failed to meet demand for such learning, online education has expanded its reach within the higher education sector. Nearly 30% of college students now complete at least some of their college coursework online—almost half of those students are enrolled in fully online programs (Department of Education, 2016). Many such fully online programs are run by for-profit institutions, whose role has expanded with the rise of online education. Massive online open courses (MOOCs), many unconnected to specific degree programs, have also expanded dramatically. The first MOOC was offered in late 2011; the best current estimates suggest nearly 10,000 MOOCs are now being taken by a total of 80 million or so worldwide learners (Class Central, 2018). MOOC-offering platforms have begun partnering with existing universities to offer “micro-master’s” or “nano-degrees,” certifications given after a student completes a fraction of the courses comprising a typical master’s degree.

The broad question raised by the spread of online education is whether the need for lifelong learning can be successfully met through such technological means. The best evidence to date suggests substantial challenges that any proposal to leverage online education must confront.

2. The Central Questions Surrounding the Effectiveness and Cost of Online Education

Do students learn as much in online courses as in in-person courses?

A growing body of research implies courses taught through online formats lead to somewhat worse learning outcomes for students than their in-person counterparts (Joyce, Crockett, Jaeger, Altindag, & O'Connell, 2015; Alpert, Couch, & Harmon, 2016; Krieg & Henson, 2016). Perhaps even more concerning is that, relative to in-person coursework, online coursework appears particularly damaging for the educational progress of less academically skilled students. A recent study of students at one major for-profit college, which enrolls precisely the type of economically vulnerable students that public policy should be most focused on, suggests that online coursework lowers students' grades and educational attainment (Bettinger, Fox, Loeb, & Taylor, 2017). Similar findings appear for students in the community college sector (Xu & Jaggars, 2013). Little rigorous evidence exists of a substantial online program that does not harm less academically skilled students' learning relative to in-person coursework.

There are, however, glimmers of potential success stories in the online higher education space. In some settings, particularly ones with less academically disadvantaged populations, students do equally well across both online and in-person formats (Figlio, Rush, & Yin, 2013; Bowen, Chingos, Lack, & Nygren, 2014). Blended learning approaches combining online and in-person components also appear to generate relatively similar student outcomes as purely in-person coursework, at least among students in large, public four-year universities (Bowen et al., 2014; Alpert et al., 2016; Joyce et al., 2015). If online education can be made less expensive than in-person education, these results raise the possibility that the online format may be a cost-effective delivery mechanism, at least for less disadvantaged students.

Do existing online college degree programs pay off for students?

Existing online higher education options do not appear to pay off economically for the students who enroll in them. One resume audit study found that otherwise identical job applicants were 22% less likely to receive a callback from a prospective employer if their degree came from a for-profit online institution, as opposed to a

nonsselective public institution (Deming, Yuchtman, Abulafi, Goldin, & Katz, 2016). Research using the universe of tax records to compare the earnings of college students before and after their enrollment in online degree programs suggests that the labor market returns to such programs are extremely low and insufficient to justify their cost to students (Hoxby, 2017). This contrasts with recent evidence that certificates and degrees from in-person career technical education programs at community colleges raise students' earnings anywhere from 14% to 45% (Stevens, Kurlaender, & Grosz, 2018), with the highest payoffs coming from healthcare programs such as nursing (Grosz, 2017).

One challenge when considering this evidence is that many online degree programs, particularly ones that have been studied extensively, are run by for-profit colleges. Such institutions have been the subject of intense scrutiny concerning their recruiting practices, financial models, and the quality of education provided. Disentangling the low or negative labor market impact of online degrees from the impact of for-profit colleges is thus difficult. In other words, it is unclear whether these low returns are fundamental to the nature of online education or specific to the particular models used by one postsecondary sector.

Can online delivery increase access to higher education?

Limited evidence suggests the existence of online education options does increase access to higher education for mid-career Americans. The clearest evidence on this comes from Georgia Tech, which in 2014 developed a low-cost, high-quality online pathway to its prestigious master's degree in computer science. That program has attracted thousands of enrollees, none of whom could find appealing options in the existing higher education marketplace, and many of whom are already employed and in their 30s and 40s (Goodman, Melkers, & Pallais, forthcoming). Enrollees in that program already have BAs, often though not always in fields such as computer science or electrical engineering. Other institutions have begun learning from this model, with the University of Illinois at Urbana-Champaign developing a low-cost online MBA, and the University of Colorado at Boulder developing an online degree in electrical engineering. Whether such programs will also increase access to higher education is unclear.

Relatively little evidence exists about the role that online education can play in expanding access to mid-career Americans without BAs. Though online education has expanded dramatically, it is unclear where students choosing online options would otherwise have enrolled if not for those options. Some evidence suggests that community colleges and the for-profit sector compete for students. If all online enrollees would otherwise have attended in-person community college programs, then online education is not changing who is educated but simply where they are educated. If online options provide educations to students who would not otherwise

enroll elsewhere, then such options are expanding access to higher education. One example of an institution attempting to do this is College for America, run by nonprofit Southern New Hampshire University, which provides a competency-based online pathway to associate degrees for those currently working full-time jobs. Though online education seems to have this potential, evidence of expanded access for economically vulnerable Americans does not currently exist.

Why might Americans value opportunities to pursue higher education online?

Online education appeals to potential students largely for two reasons: price and flexibility. The rise of MOOCs, for example, is almost certainly tied to the fact that they are often free for students. The flexibility of online coursework is, however, a sometimes-overlooked key feature of its appeal. Potential students beyond traditional college age often have jobs, families, and homes that constrain them both geographically and temporally. They cannot travel long distances to take coursework, nor do so at fixed times of day that interfere with their work or family commitments. Though some online coursework requires a student to log onto a computer at particular times for discussions or other assignments, many online programs are “asynchronous,” meaning that students may complete the curriculum entirely at their own pace (up to a fixed deadline).

Georgia Tech’s online computer science degree chose this asynchronous approach, which is clearly a deeply important feature to its students. When surveyed about potential features they most valued in that online program, the four most important options students chose all related to geographic and temporal flexibility: the lack of need to commute or relocate, the flexibility of coursework and time commitments, and general convenience. Many applicants also valued the program’s low cost, though fewer than valued its flexibility.

This suggests a tension between the potential for online programs to increase access to higher education and the need to make them pedagogically effective. To reach a wide number of Americans, online degree programs must almost certainly incorporate the flexibility that asynchronous learning brings, but purely online programs and courses have not yielded good learning and labor market results for students. Blended learning, which appears pedagogically more effective, requires participants to physically appear at fixed times and thus may be sufficiently onerous to prevent those with work and family commitments from enrolling.

Does online education cost less than in-person education?

Online education appears to cost less than in-person education, though it is unclear whether that cost savings comes at the expense of educational quality. Whether online delivery costs less than in-person delivery of identical curricula and experiences is unclear. In-person delivery requires physical classrooms and instructors, constraints

which limit enrollment. Purely online delivery entails the development of online materials and interfaces—which necessitates up-front investment—but requires no physical classrooms and is not limited in its potential enrollment by the size of such classrooms. Whether such potential economies of scale sufficiently offset the required up-front investments to make online learning less costly than in-person learning is theoretically ambiguous. What is clear is that institutions with more online students charge lower prices than those with more in-person students and that tuition charged by primarily online institutions dropped between the early 2000s and more recent years (Deming, Goldin, Katz, & Yuchtman, 2015).

That online institutions charge lower prices does not mean that online delivery is more cost-effective. If the quality of the educational product being delivered suffers because of those cost savings, lower prices may not translate into improved student outcomes. Georgia Tech, for example, found that the creation of each individual course required \$200,000-300,000 to achieve the quality they desired. The program only recouped this high fixed cost once it enrolled thousands of students. The scale of the program suggests it is on the verge of producing 10% of all U.S. master's degrees in computer science. A smaller program of high quality may not have been financially viable, suggesting that online programs may need to follow a model of high up-front investment followed by large scaling in order to teach students effectively. Building online courses on the cheap runs the danger of producing low-quality educational experiences that are likely particularly damaging to students without strong academic backgrounds.

3. Conclusion

The rise of a new generation of online degree programs such as micro-master's and nanodegrees suggests there is substantial demand for mid-career training that is not being met by the current higher education marketplace. The rise of the online for-profit sector in the 2000s may also have been the result of community colleges failing to provide degree programs that were sufficiently flexible to meet the needs of working Americans with families, homes, and a host of geographic and temporal constraints. All of this evidence suggests there is real demand for online education that serves the mid-career market in a way that is currently missing, particularly for lower skilled students.

One prominent example of such an effort has come from California Governor Jerry Brown, whose recent *California Online College* proposes to “spend \$120 million... to create a new central online community college designed to bring workforce training to the estimated 2.5 million adults between the ages of 25 and 34 who have a high school diploma or some college experience but no college degree.” Whether such an effort succeeds in improving students' lives depends in part on important

concerns raised by existing evidence about online education's pedagogical effectiveness, labor market returns, potential to increase access, and cost structure.

Any proposal to expand online coursework for economically vulnerable Americans should engage carefully with the following questions:

1. What specific technological and curricular choices can be made to compensate for the apparent challenges that many students have when learning through an online setting? Can online learning be made sufficiently effective for lower skilled students to be worth their and the public's investment in it?
2. What types of training can effectively be done through online coursework and are in sufficiently high demand to be worthwhile for students? In other words, what degree programs will substantially improve such students' economic outcomes?
3. Which institutions are best suited to administer specific online degree programs? Should such administration be centralized in new entities, centralized in a single existing community college or four-year college (such as a flagship institution), or distributed across institutions based on preexisting areas of expertise?
4. Are purely online programs necessary or sufficient to provide worthwhile mid-career training, or are blended programs that combine online and in-person elements a better path to pursue?
5. What accountability systems can be put in place to ensure program quality? Most generally, how can future online programs avoid the apparent low benefit-cost ratios achieved by many existing online programs?

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