COMMUNITY COLLEGE RESEARCH CENTER
CCRC BRIEF

Online Learning: Does It Help Low-Income and Underprepared Students?

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Advocates of online learning are optimistic about its potential to promote greater access to college by reducing the cost and time of commuting and, in the case of asynchronous approaches, by allowing students to study on a schedule that is optimal for them. The enthusiasm surrounding recent innovative, technology-based education initiatives, combined with an ongoing acceleration in online course enrollments (Allen & Seaman, 2010) has led educators to ask whether the continuing expansion of online learning could be leveraged to increase the academic access, progression, and success of low-income and underprepared college students. To provide an evidence-based perspective on these questions, this Brief, based on a longer review, summarizes the literature on online learning and provides recommendations for policymakers and practitioners.

Summary of the Literature

The larger review, summarized briefly here, considered studies that compared online (80% or more of the course conducted online) and face-to-face (less than 30% of the course conducted online) learning in the postsecondary education setting. The postsecondary inclusion criterion distinguishes this review from other recent analyses of the online learning literature, which each included studies from a mixed variety of settings, including K-12, college, and work-based employee training contexts (Bernard et al., 2004; Zhao, Li, Yan, Lai, & Tan, 2005; U.S. Department of Education, 2009). This review was also limited to studies that compared online and face-to-face courses in terms of students' course enrollment, completion, performance, or subsequent academic outcomes. Studies that were discarded include those published prior to 2000, studies that focused on short educational interventions (e.g., a one-week treatment), and studies that allowed students to self-select into either online or face-to-face courses without attempting to control for any potential differences between the student groups. Finally, the review considered only studies conducted in the United States and Canada. This review thus included 34 papers (some with multiple studies, for a total of 36

studies). A detailed breakdown of findings can be found in the full review.

Findings

In terms of course completion, studies conducted in the community college setting strongly suggest that students are more likely to withdraw from online courses, even after controlling for a variety of student characteristics. Moreover, perhaps due to those high withdrawal rates, some tentative evidence suggests that taking online courses may discourage students from returning to the community college in subsequent semesters and from moving on to subsequent courses in their program sequence. It is unclear whether the same patterns hold in four-year colleges because (1) most studies in the four-year college setting did not discuss withdrawal rates and none discussed outcomes subsequent to the course itself, and (2) all studies in the four-year college setting focused on a specific selected course rather than assessing a broad range of courses across an institution or system.

Among students who persist to the end of a given course, those enrolled in online sections typically earn final grades that are similar to those enrolled in face-to-face sections. It is possible, however, that this finding is a result of differential withdrawal: if poorly-performing students are more likely to withdraw from an online section of a course than a face-to-face section, then the online section will have artificially higher grades at the semester's end. And indeed, the only study to explicitly remove the impacts of differential withdrawal found that community college students who persisted to the end of a course earned substantially lower grades in online than in face-to-face sections.

A search for studies on the impact of online learning on course enrollment found nothing. However, Jaggars and Xu's (2010) analysis of online course data across 23 colleges in the Virginia Community College System provides suggestive evidence that the availability of online courses does not necessarily induce new enrollment; rather, ongoing students may be more likely than new students to take advantage of the flexibility of online learning.

Overall, no studies focused specifically on low-income students, and only a handful focused on underprepared students. However, the general pattern of results for community college students (the majority of whom are low-income and underprepared) is not promising. The theoretical and research literature suggests at least three reasons why students may struggle in online courses: technical difficulties, increased "social distance," and a relative lack of structure inherent in online courses. Another factor is the

fact that many student supports are built around a campus infrastructure, and online students may have difficulty accessing them.

Moreover, several factors may discourage low-income young adults from leveraging the flexibility of online coursework as an entry point into college. First, in order to make an investment in college, some students may seek online *degree plans* rather than online *courses*, and the supply of online degrees is limited. Second, technological infrastructure may pose a significant barrier to low-income students. And third, online courses typically do not substantially lower cost barriers to college.

Recommendations

In order to improve postsecondary access and success among low-income and underprepared adults, online courses need to be improved and barriers to low-income student enrollment in these courses need to be overcome. The recommendations that follow discuss a host of issues relevant to these goals.

Improving Low-Income Student Access

Reduce direct costs to low-income students. To reduce student costs on a large scale, initiatives to expand education through freely available online courses may be a step in the right direction, particularly if paired with a low-cost provision of high-speed Internet access and laptops to low-income students. Where possible, students should also be able to cover course-related technology costs through financial aid.

Revise financial aid structures. Chao, DeRocco, and Flynn (2007) recommend that Pell grant restrictions be loosened to allow year-round college attendance, no reduction in aid for attendees of low-tuition community colleges, and distance education programs leading to one-year or shorter certificate programs. In addition, state restrictions on financial aid for students in online degree programs should be re-examined. Perhaps even more importantly, these potential cost decreases should be part of a legislative package that clarifies and simplifies eligibility rules to encourage more low-income students to apply for grants in the first place (Dynarski & Scott-Clayton, 2006).

Create more fully online programs. If community colleges and other institutions that predominantly serve low-income and underprepared students wish to draw new enrollees via online coursework, they may need to consider how to design and fund fully online degree programs. For some institutions, cost-effective provision of an entire degree program may require a partnership with other schools or organizations that provide online learning. It is also imperative to gain faculty support, who will often be hesitant to support a new online program unless they are confident of its quality. That is, the institution's ability to expand access may be in part dependent on whether it can first solve the challenges of online course completion and progression.

Improving Online Completion and Progression

Assess student ability to succeed. Many colleges already administer online readiness assessments. Rather than using these assessments merely to restrict the population of students who enroll in online courses, it is recommended that colleges concentrate on improving the success of *all* students who choose to enroll online, using readiness assessments to help inform the programming and supports discussed below.

Teach online learning skills. Colleges can assist students in building requisite skills prior to taking an online course, such as through a prerequisite computer literacy course. Such policies, however, have two potential drawbacks. First, if a computer literacy or similar course is merely recommended and not required, some students will ignore that recommendation. Second, requiring such a course may inadvertently undercut access to online courses by discouraging students who feel they cannot spend time or money on an extra course. In order to support both access to *and* success in online courses, institutions could either: (1) provide incentives to students to build their skills prior to online course enrollment, for example, by offering reduced fees in subsequent online courses; or (2) provide struggling students with the scaffolding and supports they need within the framework of entry-level online courses.

Enhance non-instructional supports. To remove the burden of non-instructional support from the shoulders of instructors and improve the level of supports offered to students, colleges should more seriously consider how to provide high-quality and easy-to-access online learning supports. While it may seem prohibitively expensive for institutions to provide a full range of round-the-clock support services to its online students, Scott-Clayton (2011) and Karp (2011) discuss promising solutions to this quandary in their respective papers in this series. Applying their discussions to this particular issue, I would make three suggestions.

First, such support services must be seamlessly integrated into the spaces in which students already live and work. At a minimum, links to traditional on-campus support services should be displayed prominently on the course's web interface, along with comprehensive access information. Students will also be more likely to take advantage of support services if they are explicitly incorporated into class activities. To do so, campus administrators would need to orchestrate collaboration between support providers and academic departments, with the aim of creating a set of support-oriented academic activities that would be systematically built into the curricula of the most common introductory courses taught online.

Second, with assistance from practitioners and researchers, stakeholders in the field should design and test automated systems that could dynamically provide key support services online, without the need for round-the-clock human staffing. Unusual or complex problems could then be handled by support staff during regular working hours.

Third, to cost-effectively expand service availability, colleges should consider partnering with other institutions to capitalize on economies of scale, providing a single set of support systems to multiple campuses. Of course, this option is feasible only if the set of partnering institutions is willing to agree on a consistent set of systems, such as using the same web-based platform (for technology support) and course numbering and

program requirements (for advising support). Accordingly, the shared-support strategy may be most feasible within large districts or state systems wherein all colleges share similar infrastructures, curricula, and policies.

Enhance instructional supports. To overcome the social distance inherent in distance learning, it is recommended that colleges:

Intentionally design online courses. To create consistently high online retention rates, instructors may need to partner with instructional technology professionals to design courses, and they may need to spend substantial amounts of time implementing scaffolding activities, moderating discussion, and encouraging struggling students. Before incorporating computer-based tutoring into an online course, instructors and designers need to carefully evaluate the quality of the program's pedagogical design. As Grubb (2010) points out, many computer-based tutoring programs are based on "the dismal practices of remedial pedagogy" (p. 28).

Support faculty development. To provide high-quality curricula and instruction, faculty need strong support from the institution. Yet CCRC's national field study of 15 community colleges (Cox, 2006) found that most faculty were left to design online courses on their own and that training for online instructors was primarily focused on technical aspects of the online course management system. None of the colleges offered faculty the degree of expert support they needed to redesign curricula and pedagogical strategies for the online context. Worse, some institutions have policies that actively undercut faculty engagement in online learning, such as not counting online courses as part of a normal teaching load, or enrolling twice the number of students in online as compared to face-to-face sections (Millward, 2008).

Engage in continuous improvement efforts. As Jenkins (2011) discusses in his paper in this series, an institution is unlikely to substantially improve student success unless it engages in a systematic long-term improvement process. Through a systematic approach of ongoing peer review, outcome measurement, and subsequent adjustments, departments and colleges can begin to develop specific practices that improve student outcomes. For example, the American Public University System engages in continuous quality improvement of its online courses using a course-based student survey built on the Community of Inquiry framework (see Boston et al., 2009; Arbaugh et al., 2008; Ice, 2009). Using survey outcomes, the system identifies programs and instructors with significantly higher scores and examines their work for innovative or exemplary practices that could potentially be implemented by lower-scoring programs and instructors. Perhaps most importantly, program directors review individual faculty outcomes with each instructor, constructively discuss potential ways to improve scores, and incorporate these reports into quarterly audits. Finally, in addition to assessing quality through peer review and student surveys, it will be most helpful for departments to set ambitious standards for course learning outcomes and to continuously assess and improve the extent to which students meet these outcomes (Jenkins, 2011).

Of course, a quality improvement process should encompass both online and face-to-face courses. Yet online program administrators may have an advantage in terms of advocating for a continuous improvement agenda for two reasons. First, online learning is relatively new to many faculty, and their experience with it is still evolving. It may be more politically viable to introduce a new quality improvement approach within the still-shifting context of online learning than within the relatively traditional context of face-to-face learning. And second, online course management systems offer the possibility of far more advanced learner analytics than is possible in face-to-face learning, and these sophisticated data might feed more readily into a continuous improvement approach. For example, the Open Learning Initiative captures transactional data on all student learning activities and uses the resulting data to revise each course for the following semester (Thille, 2008).

Conduct further research. We need more information on the extent to which online learning improves low-income student access, as well as on the effectiveness of potential policies and practices that may attempt to improve such access. We also need more solid information on the financial costs involved in designing, teaching, and maintaining high-quality online courses and supports, and how these costs compare with face-to-face courses and supports. Further, researchers need to work to isolate the key elements and mechanisms of effective non-instructional supports and to identify the instructional behaviors and activities that encourage student engagement, motivation, retention, and learning. To accomplish this end, foundations and governmental research organizations will need to foster collaborative partnerships between practitioners and researchers, as well as strongly promote and support the creation of theoretically driven frameworks and research designs that make use of clear and consistent measures of student and instructor behavior and that explicitly link those patterns to student academic outcomes.

Conclusion

In order to improve access and success among low-income and underprepared students, online courses must be improved, and barriers to low-income student enrollment in these courses must be lowered. The recommendations set forth in this Brief inform these goals; however, the adoption of many of these recommendations will require a substantial investment of new resources in online learning. There is still very little concrete information as to the real cost-effectiveness of online coursework under the current set of practices; there is also very little information on whether online learning can provide savings to institutions without compromising student success. Further research in this important area is certainly needed. It is clear, however, that in order to improve the output of online courses, it is necessary to improve the inputs into the system, which may threaten current cost models for online education. Thus, any substantial improvements to the effectiveness of online learning may require new cost models, designed in collaboration among educational foundations, state and federal government, and college systems.

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