CCRC COMMUNITY COLLEGE RESEARCH CENTER
TEACHERS COLLEGE, COLUMBIA UNIVERSITY

RESEARCH OVERVIEW / APRIL 2013

What We Know About Online Course Outcomes

Online Higher Education Is Expanding Rapidly

Since 2010, online college course enrollment has increased by 29 percent. Currently, 6.7 million students—or roughly one third of all college students—are enrolled in online courses. Community colleges in particular have embraced online education as a way to better serve their large numbers of nontraditional students, many of whom juggle multiple responsibilities. In 2008, 97 percent of two-year colleges were offering online courses—compared with only 66 percent of all postsecondary institutions.[1]

Despite this rapid growth in online education, little is known about the effectiveness of online courses for community college students. Over the past two years, CCRC has sought to fill this gap in knowledge by conducting studies of online course outcomes at two large statewide community college systems, one in a southern state and one in a western state. [2]

This research overview is part one in CCRC's online learning practitioner packet. To learn more about what administrators can do to improve student outcomes, see *Creating an Effective Online Environment* (part two). For more information on effective online teaching, see *Creating an Effective Online Instructor Presence* (part three).

DEFINITION

ONLINE COURSE

Throughout this practioner packet, an "online" course refers to a course held entirely online, as opposed to a "hybrid" course which consists of both online and face-to-face instruction.

Who Takes Online Classes?

In both state systems, online courses were more popular among community college students who had relatively strong academic backgrounds. Online students were more likely to be academically prepared at entry, from higher income neighborhoods, and fluent in the English language. Online students were also more likely to be balancing multiple life demands (e.g., to be 25 or older, to have dependents, or to be employed full time) and to be White.

Online students were more likely to be academically prepared at entry, from higher income neighborhoods, and fluent in English.

Nearly half of the students in these statewide systems took at least one online course during their first four or five years of enrollment. However, few students took all their courses online. Fewer than 5 percent of students took all of their courses online in their first semester; most "online" students enrolled in a mix of online and face-to-face courses throughout their college careers.[3]

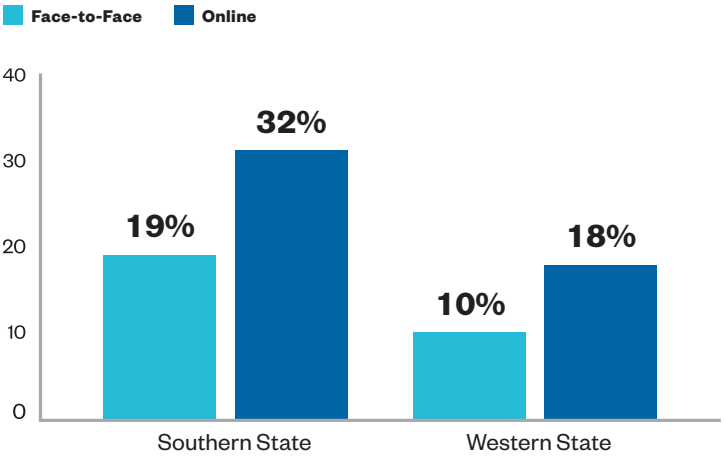
What the Research Tells Us

Students More Likely to Withdraw From Online Courses

Because of the distinct characteristics of students who take online classes, CCRC compared online and face-to-face course outcomes among only those students who had ever taken an online course during the period of study ("ever-online" students). We first examined overall course failure and withdrawal rates, meaning that students paid full tuition for the course but ultimately earned no credit for it, either because they failed or dropped out of the course. In both states, failure and withdrawal rates were significantly higher for online courses than for face-to-face courses.

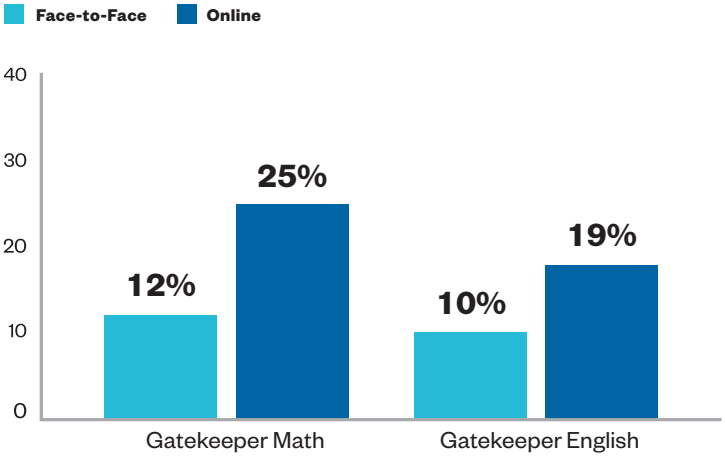
In both states, failure and withdrawal rates were significantly higher for online courses than for face-to-face courses.

Failure/Withdrawal Rates in Online and Face-to-Face Courses (Southern[4] and Western[5] States)



In further analysis of the southern state, we examined introductory math and English courses—key "gatekeeper" courses required for almost all students. Again, failure and withdrawal rates for online gatekeeper courses were substantially higher than those for face-to-face gatekeeper courses.

Failure/Withdrawal Rates in Online and Face-to-Face Gatekeeper Courses (Southern State)[6]



Course Completers Perform More Poorly in Online Courses

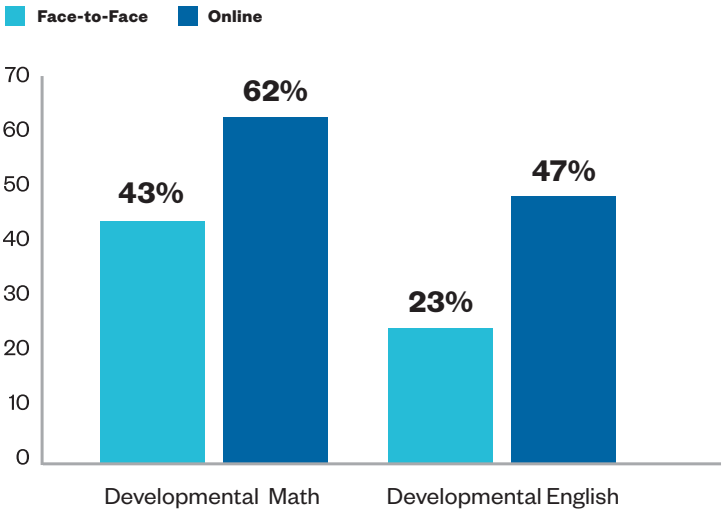
While former studies have found fairly similar grades among students who completed either an online or face-to-face section of a given course,[7] CCRC's studies of the two statewide systems suggest that these earlier studies may have underestimated differences in student performance. CCRC's analyses found that students who completed online course sections were 3 to 6 percentage points less likely to receive a C or better than students who completed face-to-face course sections.[8]

Developmental Students Particularly Challenged in Online Courses

Students who took their developmental courses online fared particularly poorly. In both states, failure and withdrawal rates were sharply higher in online developmental courses; in online developmental English, failure and withdrawal rates were more than twice as high.

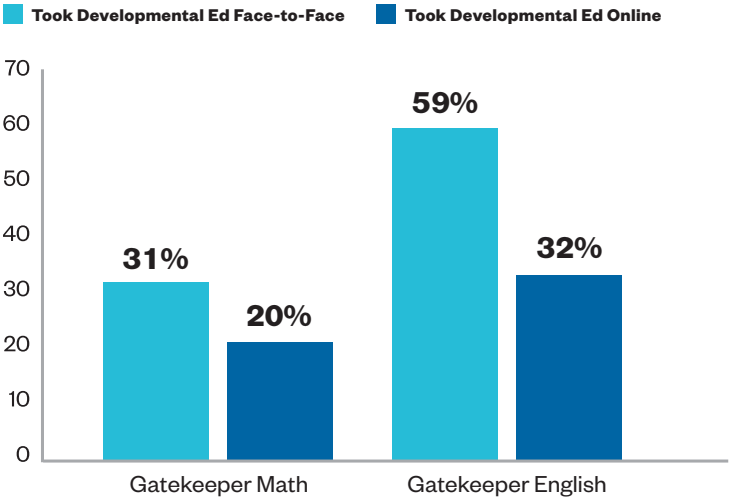
Of students who enrolled in gatekeeper courses, students who had taken developmental education online were far less likely to pass than students who had taken it face-to face.

Failure/Withdrawal Rates in Online and Face-to-Face Developmental Courses (Southern State)[9]



Students who took developmental courses online were also significantly less likely to enroll in first-level gatekeeper math and English courses. Of students who did enroll in gatekeeper courses, students who had taken developmental education online were far less likely to pass than students who had taken it face-to-face.

Gatekeeper Pass Rates Among Online and Face-to-Face Developmental Students Who Enrolled in Gatekeeper Courses (Southern State)[10]



Students Who Take Online Courses Less Likely to Persist and Attain a Degree

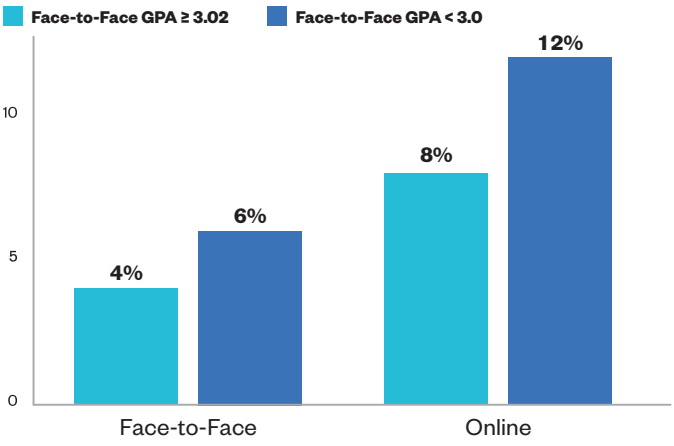
Online course taking was also negatively associated with college persistence and completion. Western and southern state system students who took one or more online courses in their first semester were 4 to 5 percentage points less likely to return for the subsequent semester. In both states, students who took a higher proportion of credits online were also less likely to obtain a degree or transfer to a four-year institution than students who took lower proportions of online credits (6 and 4 percentage points less likely, respectively). [11]

Achievement Gaps Tend to Widen in Online Courses

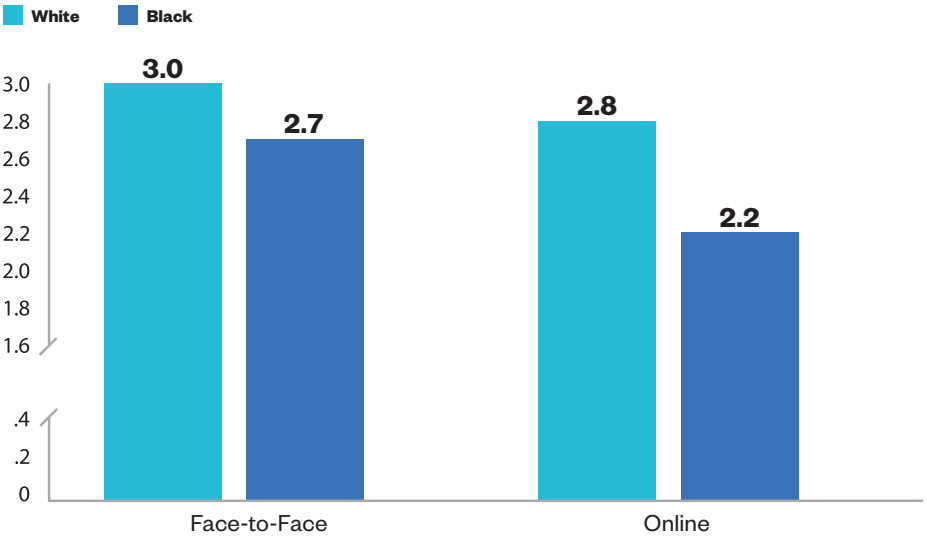
Some groups of students had particular difficulty adjusting to online learning, including males, students with lower prior GPAs, and Black students. The performance gaps that existed among these subgroups in face-to-face courses became even more pronounced in online courses. The increases in performance gaps were present in all subject areas.[12]

The performance gaps that existed among student subgroups in face-to-face courses became even more pronounced in online courses.

Withdrawal Rates for Higher and Lower Performing Students in Face-to-Face and Online Courses (Western State)[13]



Grades for Black and White Students Who Completed Face-to-Face and Online Courses (Western State)[14]



Adding Strict Controls Increases Negative Outcomes Associated With Online Courses

The findings in this overview represent differences in online and face-to-face outcomes based on descriptive data.[15] To adjust these descriptive results for possible biases, CCRC researchers conducted analyses controlling for student socioeconomic and educational characteristics,[16] and they carried out a rigorous instrumental variable analysis in the western state.[17] In these analyses, the inclusion of strict controls for student characteristics increased estimated differences in failure and withdrawal rates among students taking online and face-to-face courses.

The inclusion of strict controls for student characteristics increased estimated differences in failure and withdrawal rates among students taking online and face-to face courses.

Conclusion

CCRC's studies suggest that community college students who choose to take courses online are less likely to complete and perform well in those courses. The results also suggest that online courses may exacerbate already persistent achievement gaps between student subgroups.

Additional CCRC qualitative research of online courses in one state system provides an in-depth look into why online courses may not be achieving better results. Part two of this practitioner packet, *Creating an Effective Online Environment*, reviews some of the findings from that research and makes recommendations for administrators seeking to improve online education at their institutions.

Part three of this practitioner packet, *Creating an Effective Online Presence*, addresses the importance of student–instructor interaction in online courses, describes a case study, and presents observations and considerations for online faculty working to improve student retention and performance in their courses.

Endnotes

1. Parsad & Lewis (2008).
2. Overall withdrawal and failure rates vary between the two states. One reason for this difference may be that—in comparison with national data from the Integrated Postsecondary Education Data System—the student population in the southern state system is more rural and low-income, with a greater proportion of Black students. The student population in the western state system is more urban, with a higher proportion of White students.
3. Results from a nationwide study from 2007–08 (Radford, 2011) corroborate this finding.
4. Southern state system sample consists of slightly less than 24,000 students at 23 community colleges who were tracked from fall 2004 through summer 2008. The analysis was limited to students who took at least one online or hybrid course during that period, leading to a sample of 184,357 courses (Jaggars & Xu, 2010).
5. Western state system sample consists of over 51,000 students at 34 community colleges who were tracked from fall 2004 through spring 2009. The sample was limited to students who took at least one online or hybrid course, leading to a sample of 323,528 courses(Jaggars & Xu, 2011b).
6. Analysis based on observations of ever-online students in the 2004 cohort enrolled in 13,973 gatekeeper English and 8,330 gatekeeper math courses (Xu & Jaggars, 2011a).
7. See Jaggars & Bailey (2010).
8. Jaggars & Xu (2010); Xu & Jaggars (2011b).
9. Analysis based on 4,660 math remedial students and 2,495 English remedial students in the 2004 cohort who took at least one online course in the period of study. Analysis based on observations of 13,126 developmental courses; 373 of these courses were online developmental English and 773 courses were online developmental math (Jaggars & Xu, 2010).
10. Estimates derived from a model-based prediction of passing rates controlling for student-level and school-level characteristics among 4,660 remedial math students and 2,495 remedial English students in the 2004 cohort who took at least one online course in the period of study (Jaggars & Xu, 2010).
11. Jaggars & Xu (2010); Xu & Jaggars (2011b)
12. Xu & Jaggars (2013).
13. Analysis based on 51,017 degree-seeking students tracked from the fall term of 2004 through the spring of 2009 (Xu & Jaggars, 2013).
14. Analysis based on 51,017 degree-seeking students tracked from the fall term of 2004 through the spring of 2009 (Xu & Jaggars, 2013).
15. One exception is gatekeeper pass rates among students who enrolled and had taken developmental courses online and face-to-face (see figure on page 3), where estimates are derived from predictive models controlling for student and school characteristics.
16. Jaggars & Xu (2010); Xu & Jaggars (2011a, 2011b, 2013).
17. Xu & Jaggars (2012).

Sources

Jaggars, S. S., & Bailey, T. (2010). *Effectiveness of fully online courses for college students: Response to a Department of Education meta-analysis*. New York, NY: Columbia University, Teachers College, Community College Research Center.

Jaggars, S. S., & Xu, D. (2010). *Online learning in the Virginia Community College System*. New York, NY: Columbia University, Teachers College, Community College Research Center.

Parsad, B., & Lewis, L. (2008). *Distance education at degree-granting postsecondary institutions: 2006–07* (NCES Report No. 2009-044). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics.

Radford, A. W. (2011). *Learning at a distance: Undergraduate enrollment in distance education courses and degree programs* (NCES Report No. 2012-154). Washington DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics.

Xu, D., & Jaggars, S. S. (2011a). The effectiveness of distance education across Virginia's community colleges: Evidence from introductory college-level math and English courses. *Educational Evaluation and Policy Analysis, 33*(3), 360–377.

Xu, D., & Jaggars, S. S. (2011b). *Online and hybrid course enrollment and performance in Washington State community and technical colleges* (CCRC Working Paper No. 31). New York, NY: Columbia University, Teachers College, Community College Research Center.

Xu, D. & Jaggars, S. S. (2012). *Examining the effectiveness of online learning within a community college system: An instrumental variable approach.* Manuscript in preparation. New York, NY: Columbia University, Teachers College, Community College Research Center.

Xu, D., & Jaggars, S. S. (2013). *Adaptability to online learning: Differences across types of students and academic subject areas* (CCRC Working Paper No. 54). New York, NY: Columbia University, Teachers College, Community College Research Center.

This research overview was prepared by Shanna Smith Jaggars, Nikki Edgecombe, and Georgia West Stacey, Community College Research Center, Teachers College, Columbia University. Funding was provided by the Bill & Melinda Gates Foundation.

CCRC COMMUNITY COLLEGE RESEARCH CENTER
TEACHERS COLLEGE, COLUMBIA UNIVERSITY

Community College Research Center
Teachers College, Columbia University
525 West 120th Street, Box 174
New York, New York 10027
Tel: 212.678.3091 Fax: 212.678.3699
ccrc@columbia.edu
http://ccrc.tc.columbia.edu

Creating an Effective Online Environment

Why Might Students Perform More Poorly Online?

Online courses present a number of challenges particular to their format. Besides basic technological proficiency, online courses require students to possess an array of well-developed non-academic skills; students must be able to manage time, stay organized, and recognize when and how to ask for help.[1] Online courses also require instructors to be conversant with interactive technologies that enable them to create a strong instructor presence and engage students in the virtual space.[2]

CCRC research indicates that students perform more poorly in online courses than they do in face-to-face courses.[3] Evidence from recent qualitative analyses suggests that online courses may not be providing the range and intensity of supports that students need to perform well online.[4] With the popularity of online courses rapidly increasing, what can administrators do to create an effective "online environment" so that growth in online learning does not go hand in hand with higher course failure and dropout rates?

This guide describes findings from CCRC's qualitative research on online education in one community college system. Drawn from interviews with online students and faculty and observations of online courses, these findings shed light on areas of weakness in online learning. On the basis of these results, this guide presents recommendations to administrators looking to improve online learning at their college.

Evidence from recent qualitative analyses suggests that online courses may not be providing the range and intensity of supports that students need to perform well online.

This is part two in CCRC's online learning practitioner packet. To learn more about student outcomes in online courses, see *What We Know About Online Course Outcomes* (part one). For more information on effective online teaching, see *Creating an Effective Online Instructor Presence* (part three).

DEFINITION

ONLINE COURSE

Throughout this practioner packet, an "online" course refers to a course held entirely online, as opposed to a "hybrid" course which consists of both online and face-to-face instruction.

What the Research Tells Us

Why Do Students Take Online Courses?

Although nearly half of community college students take at least one online course, few students take all of their courses online. Most students enroll in a mix of online and face-to-face courses throughout their college experience. [5]

Investigating the rationale for this mix-and-match strategy can tell us much about the online experience for students. For example, do students make a conscious choice to take only some of their courses online? If so, how do they decide which courses to take online, and what does this decision process suggest about the strengths and weaknesses of online learning?

In the interviews we conducted, almost all students explained that the flexibility of online learning helped them to manage their busy schedules. A handful of students also reported that they could use their time more efficiently with online courses and that online learning suited their personal learning style. Most students, however, indicated that they would not like to take all of their courses online.[6]

Why Do Students Prefer To Take Some Courses Face-To-Face?[7]

INTERACTION WITH TEACHERS	CONNECTION TO PEERS & COLLEGE CAMPUS
Students indicated that in face-to-face courses they felt their relationship with instructors was more "personal," "immediate," "detailed," and "solid." In an online setting, students found teachers to be less accessible; as one student said, "It just seems…when you do it online, if you need help, your teacher is basically not there."	Some students valued interacting with their peers in face-to-face courses but felt that online peer-to-peer interaction was a waste of time. Students also valued the resources available on the college campus; one student said, "I have somewhere to come in person to ask questions."

How Do Students Choose Which Courses To Take Online?

The reasons students cited for deciding to take a course online or face-to-face generally fell into three broad categories: whether the subject was well suited to the online context; whether the course was "easy" or "difficult"; and whether the course was "interesting" or "important."[8] It is evident from our interviews that many students' decisions about whether to take a course online or face-to-face were driven by a perception that it is harder to learn course material online.

Many students' decisions about whether to take a course online or face-to-face were driven by a perception that it is harder to learn online.

What Factors Determine Whether Students Choose To Take Courses Online Or Face-To-Face?[9]

SUITABILITY OF SUBJECT AREA	COURSE DIFFICULTY	COURSE IMPORTANCE AND INTEREST
Students felt that some subjects—such as languages, public speaking, and laboratory science—were unsuited for the online context. One student said of online German: "When all you do is write your German and type in little prompts, you're not really learning how to speak it."	Students indicated a preference for taking classes they excepted to be difficult in a face-to-face setting. According to one student, "If you're not comfortable *learning the material on your own and teaching yourself*, then you should be in (a face-to-face) class."[10]	Students preferred to take "important" and "interesting" courses (including those in their major) face-to-face. One student told us: "I actually enjoyed the class, so I didn't want to *just* take it online. I wanted to sit in the classroom and *actually learn about it*."[11]

What Are Student and Faculty Expectations for Online Courses?

Students and faculty in the online environment had specific but mismatched expectations for their courses and for each other. Both students and faculty indicated in interviews that online courses were more difficult and time-consuming than they expected. Beyond their shared misperception that online courses would offer an "easy way out," the two groups' expectations tended to differ widely, leading to frustration on both sides and potentially contributing to higher attrition rates for online courses.[12]

Student and faculty expectations tended to differ widely, leading to frustration on both sides and potentially contributing to higher attrition rates for online courses.

Students and instructors differed most in their expectations for their responsibilities in online courses. Instructors expected online students to be independent learners who are self-motivated with strong time management skills. Although students agreed that these traits and skills are necessary, they expected their instructors to help them with time management and to motivate and inspire them through active engagement in the teaching and learning process.

By examining student and teacher expectations and understanding how they differ, colleges can gain insight into what might make online courses more effective and satisfying for students and instructors. With the benefit of these insights, they can implement readiness activities and training that equips both groups with the knowledge and skills they need to meet expectations in the online environment.

Expectations For Online Courses[13]

STUDENTS	FACULTY
Responsibility	
Teachers will guide and motivate students to learn through engaging activities and varied pedagogical approaches.	Students will be independent learners who are self-motivated and actively seek out help if they need it.
Instructor Presence and Course Materials	
Varied course materials will be used to deliver content. Instructors will have an active presence in the online environment and express "caring" through accessibility and time invested in the course.	Course content will be delivered mostly through text-based materials and asynchronous discussion boards. Instructors will play the role of "content manager" and "guide on the side."
Communication, Feedback, and Guidelines	
Instructors will provide quick feedback via discussion board or email, including over the weekend. Instructors will provide explicit information about assignments and exams, clear grading rubrics, and detailed feedback on graded assignments.	Instructors will not be "on call," particularly over the weekend. If students want more help, information, or feedback on assignments, they will seek it out.

Are Negative Outcomes Associated With Online Courses the Same in All Subject Areas?

Findings from one CCRC study indicate that although students in all academic subject areas performed more poorly in online courses than in face-to-face courses, the effects tended to be weaker in subject areas—such as the physical sciences and computer science—that generally attract better prepared students. In contrast, in subjects that attract a wide variety of students (such as English and the social sciences), the difference in student performance was more pronounced. Interestingly, even students who typically adapted well to online coursework tended to perform more poorly online in these subject areas, possibly indicating negative peer effects.[14] Two academic subject areas appeared intrinsically more difficult for all students in the online environment: the social sciences (which include anthropology, philosophy, and psychology) and the applied professions (which include business, law, and nursing).[15]

Recommendations

To maximize the effectiveness of online courses, colleges should consider improving several areas that may contribute to poor retention and performance: student preparation and support, course quality and design, and faculty professional development.

Student Preparation and Support

Readiness Activities

Success in online courses requires a range of technical and non-academic skills that our research suggests may be lacking in a significant portion of community college students. To address this deficiency, colleges should consider making readiness activities a requirement prior to or during registration periods for online courses, so students can determine if the online course format is appropriate for them. Readiness activities should not only cover the technological requirements and competencies necessary to succeed in online courses but also outline the behaviors and responsibilities expected of students.

Readiness activities should not only cover the technological requirements and competencies necessary to succeed in online courses but also outline the behaviors and responsibilities expected of students.

Colleges should also consider integrating scaffolded instruction of online learning skills—such as time management, organization, and reading strategies—particularly into online courses that serve larger proportions of students who tend to perform more poorly in the online context.[16] Many online courses already include course-specific orientations for students. These orientations could be used to delineate the skills necessary for success in the course and to introduce materials and assignments that will give students opportunities for sustained practice of online learning skills.

Screening

Even the most comprehensive readiness activities may be insufficient to impart critical skills to some students, so colleges might want to take the additional step of treating online learning as a privilege rather than a right. For instance, because research indicates that students with lower GPAs are more likely to fail or withdraw from online courses, colleges might consider requiring a minimum GPA to enroll in an online course.

Colleges could also consider limiting or eliminating online sections of courses in which a considerable proportion of students have historically performed poorly. Many colleges have already followed this approach by offering very few online courses in developmental education.

Early Warning Systems

To ensure that online students get the support they need, colleges might want to implement early warning systems that identify and intervene with students who are having difficulty in online courses. For example, if a student fails to sign in to the online system, or fails to turn in an assignment, the system could generate a warning for the instructor, who could in turn call the student to see if he or she is experiencing problems and discuss potential solutions.

Technical Support and Tutoring

Students often choose to enroll in online courses because they are juggling multiple life demands and complicated schedules.[17] Colleges should make sure that they offer support services that are both accessible during non-traditional hours and available online.

Online tutoring, advising, and technical support should be available before and after traditional business hours, as well as over the weekend, and hours of availability should be communicated clearly to online students both on their individual class web portal and on college-wide portals. Although 24-hour services may not be financially viable for individual colleges, it may be possible to offer around-the-clock services through partnerships with for-profit entities or a consortium of colleges.

Course Quality and Design

At many colleges, courses are put online in a relatively haphazard fashion, driven by instructor interest rather than a department- or college-based decision-making process. For this reason, it is often difficult for colleges to monitor their online course offerings and ensure they are of consistently high quality. To achieve greater oversight of their online course offerings, colleges might consider implementing a more centralized system of quality control.

Courses are put online in a relatively haphazard fashion, driven by instructor interest rather than a department- or college-based decision-making process.

Some colleges have created a system that allows for greater oversight by building a "virtual campus," a centralized portal where all online courses and programs are listed. In order to have their courses listed on the portal, faculty must go through a "refresh" process with a dedicated course designer. The designer works with instructors to ensure that their courses adhere to an online course template (developed by the designer with input from online faculty) and helps them incorporate instructional tools and strategies that increase student engagement and faculty–student interaction.

Faculty Professional Development

Effective online teaching requires an understanding of pedagogies and technologies that encourage student engagement and instructor–student connections.[18] To maximize the effectiveness of their online courses, colleges must ensure that online instructors receive sufficient training and support.

Colleges might want to require online instructors to complete two courses in online instruction before receiving certification to teach online—one on course design and instructional technologies and one on online pedagogy, with a focus on increasing instructor presence and

student engagement. Colleges should also ensure that online faculty members receive ongoing training and support beyond the initial courses required for certification. Finally, to develop training courses and oversee certification and incentive programs, colleges may need to hire a director of online faculty development.

Colleges should ensure that online faculty members receive ongoing training and support beyond the initial courses required for certification.

Conclusion

Online education holds great promise for community college students, but there remains work to be done before it offers an optimal alternative to the face-to-face experience. Through comprehensive improvement efforts, administrators can create an environment in which online faculty and students have the supports that will help them succeed.

Part three of this practitioner packet, *Creating an Effective Online Instructor Presence*, is aimed at online instructors who are seeking ways to better engage their students and improve retention and performance in their courses. We review our findings on the importance of instructor presence, present a case study, and list considerations for online instructors as they design and teach their courses.

Endnotes

1. Bork & Rucks-Ahidiana (2013)
2. Edgecombe, Barragan, & Rucks-Ahidiana (2013)
3. See *What We Know About Online Course Outcomes*, part one of this practitioner packet.
4. Edgecombe, Barragan, & Rucks-Ahidiana (2013); Jaggars & Xu (2013)
5. Jaggars & Xu (2010); Xu & Jaggars (2011)
6. Jaggars (2013)
7. Jaggars (2013)
8. Jaggars (2013)
9. Jaggars (2013)
10. Emphasis added.
11. Emphasis added.
12. Bork & Rucks-Ahidiana (2013)
13. Bork & Rucks-Ahidiana (2013)
14. Xu & Jaggars (2013)
15. Xu & Jaggars (2013). See part one of this packet, *What We Know About Online Course Outcomes*, for more detail on student outcomes in online courses.
16. See *What We Know About Online Course Outcomes* for information about how different subgroups perform in online courses.
17. Jaggars (2013)
18. See part three of this packet, *Creating an Effective Online Instructor Presence.*

Sources

Bork, R. H., & Rucks-Ahidiana, Z. (2013). *Virtual courses and tangible expectations: An analysis of students' and instructors' opinions of online courses*. Manuscript in preparation.

Edgecombe, N., Barragan, M., & Rucks-Ahidiana, Z. (2013). *Enhancing the online experience through interactive technologies: An empirical analysis of technology usage in community college*. Manuscript in preparation.

Jaggars, S. S. (2013). *Beyond flexibility: Why students choose online courses in community colleges*. Manuscript in preparation.

Jaggars, S. S., & Xu, D. (2010). *Online learning in the Virginia Community College System*. New York, NY: Columbia University, Teachers College, Community College Research Center.

Jaggars, S. S., & Xu, D. (2013). *Predicting online outcomes from a measure of course quality*. Manuscript in preparation.

Xu, D., & Jaggars, S. S. (2011). *Online and hybrid course enrollment and performance in Washington State community and technical colleges* (CCRC Working Paper No. 31). New York, NY: Columbia University, Teachers College, Community College Research Center.

Xu, D., & Jaggars, S. S. (2013). *Adaptability to online learning: Differences across types of students and academic subject areas* (CCRC Working Paper No. 54). New York, NY: Columbia University, Teachers College, Community College Research Center.

This guide was prepared by Shanna Smith Jaggars, Nikki Edgecombe, and Georgia West Stacey, Community College Research Center, Teachers College, Columbia University.

Funding was provided by the Bill & Melinda Gates Foundation.

Community College Research Center
Teachers College, Columbia University
525 West 120th Street, Box 174
New York, New York 10027
Tel: 212.678.3091 Fax: 212.678.3699
ccrc@columbia.edu
http://ccrc.tc.columbia.edu

CCRC COMMUNITY COLLEGE RESEARCH CENTER
TEACHERS COLLEGE, COLUMBIA UNIVERSITY

Creating an Effective Online Instructor Presence

Why Is Instructor Presence Important in Online Courses?

Student outcomes in online courses trail considerably behind those in face-to-face courses.[1] In order to gain insight into why this might be, CCRC undertook a series of studies that examined 23 high-demand, entry-level online courses at two community colleges in one state.[2] CCRC researchers observed the online courses, reviewed course materials, and interviewed course instructors as well as 46 students who were enrolled in at least one of the courses.

Together, these studies shed light on the fact that it is important for online instructors to actively and visibly engage with students in the teaching and learning process—perhaps with even greater intentionality than in face-to-face courses. In interviews, online students said that they placed a high value on interaction with their instructors,[3] and a quantitative analysis indicates that higher levels of interpersonal interaction were correlated with better student performance in online courses.[4]

Drawing on our research, the following guide discusses how instructors can increase their presence in online courses in ways that may contribute to improved student retention and performance. It also describes a case study of a course in which the instructor used some basic interactive technologies to create a meaningful instructor presence.

It is important for online instructors to actively and visibly engage with students in the teaching and learning process—perhaps with even greater intentionality than in face-to-face courses.

This is part three in CCRC's online learning practitioner packet. To learn more about student outcomes in online courses, see *What We Know About Online Course Outcomes* (part one). For ideas on how administrators can support effective online learning, see *Creating an Effective Online Environment* (part two).

DEFINITION

ONLINE COURSE

Throughout this practioner packet, an "online" course refers to a course held entirely online, as opposed to a "hybrid" course which consists of both online and face-to-face instruction.

What the Research Tells Us

Students Want to Feel That the Teacher Cares

Developing a connection to the instructor is critically important to students. Yet overall, students we interviewed felt that their connection to the instructor was weaker in online courses than in

face-to-face courses. When evaluating their online experience, students expressed disappointment when they sensed a lack of "caring" from their teachers; in those cases, they reported feeling isolated and like they had to "teach themselves."[5]

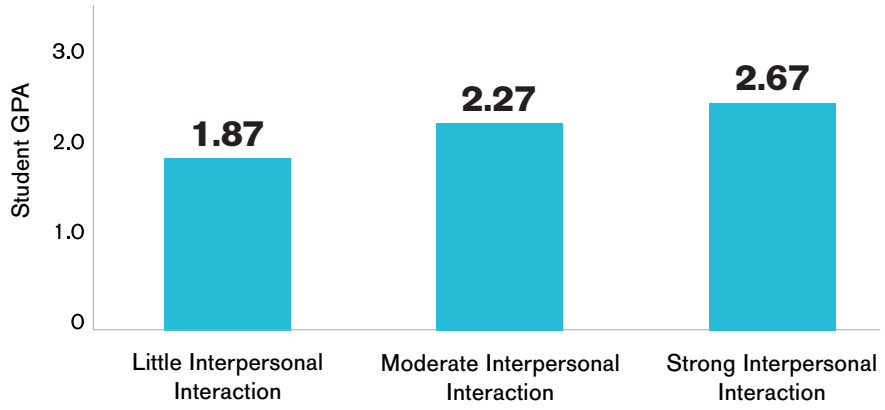
Students reported a greater sense of teacher presence and caring when instructors used interactive technologies consistently and purposefully. For instance, students reported a higher level of engagement when teachers incorporated live audio and video chats or video-capture lectures using web conferencing software such as Adobe Connect.[6] Students also got a sense of teacher caring when the instructors posted frequently in chat rooms, invited student questions and responded quickly to those questions, provided detailed feedback on student assignments, and asked for and responded to student feedback about the course.[7]

Students expressed disappointment when they sensed a lack of "caring" from their teachers; in those cases, they reported feeling like they had to "teach themselves."

Interpersonal Interaction is the Most Important Course Quality Factor

CCRC researchers rated each of the 23 online courses they observed in terms of the depth of its interpersonal interaction as well as other quality factors, such as clarity of learning objectives and effectiveness of technology integration, and used these ratings to predict student grades. The course's level of interpersonal interaction was the most important factor in predicting student grades; students in low-interaction courses earned nearly one letter grade lower than students in high-interaction courses.[8]

Relationship Between Level of Interpersonal Interaction and Student Performance[9]



Online Instructors Tend to Make Minimal Use of Interactive Technologies

Most of the online courses we observed tended to be text-heavy. Course materials that introduced content generally consisted of readings and lecture notes. Few courses incorporated auditory or visual stimuli and well-designed instructional software. In most courses the only interactive technology was an online discussion board, which was primarily geared toward peer-to-peer interaction.

Students appreciated courses that included instructional software and other technologies that diversified instructional approaches. Technology seemed particularly useful when it supported

interpersonal interaction, allowing students to see, hear, and get to know their teachers despite the physical distance between them. When optimized, technological tools can help instructors to establish a knowledgeable and approachable presence, a vital element of strong online courses.

Unfortunately, our research indicates that *effective* integration of interactive technologies is difficult to achieve, and as a result, few online courses use technology to its fullest potential.[10] Simply *incorporating* technology into a course does not necessarily improve interpersonal connections or student learning outcomes. For instance, in the courses we observed, instructors commonly required students to post on a discussion board, but it was rarely clear how these posts would contribute to student learning.[11]

Our research indicates that effective integration of interactive technologies is difficult to achieve, and as a result, few online courses use technology to its fullest potential.

Using Technology to Help Students Learn: A Case Study[12]

How can instructors create a presence in the virtual space that effectively supports student learning? In one of the courses CCRC researchers observed—an online introductory chemistry course—the instructor used widely available interactive technologies to create a robust presence and help students master challenging course material.

The following case study demonstrates how an online course can be designed to address student concerns that they "have to teach themselves" in online courses. Through a thoughtful combination of audio lectures, discussion board and chat sessions, practice problems, and virtual and actual lab experiences, the instructor created a supportive learning environment that enabled students to master challenging course material in a subject that can be difficult to teach online.

An analysis of student performance in this course supported CCRC researchers' impression that the instructor's methods were effective. Students enrolled in this section of online introductory chemistry received higher grades than similar students who took the same course online with different instructors.

Lectures

Instead of simply posting lecture notes, the instructor used Adobe Connect to post a video of her weekly lecture accompanied by a PowerPoint presentation. The narrated slides allowed for a thorough demonstration and explication of concepts and improved the instructor's ability to proactively address content-related questions. Students reported that the narrated slides personalized the course experience for them and created a sense of connection with the instructor.

Within the narrated PowerPoint presentations, the instructor provided sample problems and used the Paint program to give step-by-step demonstrations of how to format solutions to problems. These demonstrations were cited by students as particularly effective in helping them to grasp the material. Though the narratives took a considerable amount of time for the instructor to create, she was able to archive them and use them for several semesters.

Homework Assignments

Each week, students completed problems using an instructional software program called MasteringChemistry. The software offered tutorials on each set of problems, provided hints on how to approach the problem for students who were stuck, and offered extended opportunities to practice concepts.

Once students completed an assignment, the software graded it and gave them immediate feedback on their performance. The feedback gave students a clear understanding of areas where they needed more help. Just as important, the instructor was readily available to provide additional guidance when needed.

The software allowed for automated submission of assignments, and the instructor was able to track student performance on each assignment. The software also allowed the instructor to monitor students' use of hints and tutorials, enabling her to track specific areas where students were having difficulty. The instructor then used this information to inform weekly live chat sessions with the students.

In addition to graded MasteringChemistry homework assignments, the instructor provided non-graded textbook problems each week so that students had opportunities for practice without hints. She encouraged students to complete these problems for test preparation in particular.

Discussion Board

The course had a discussion board on which students could post and respond to each other's questions. Although many online students reported that peer-to-peer discussions on chat boards seemed to be "a waste of time," the instructor for this course provided a clear rubric for postings to help students engage in a more meaningful dialogue. Students gained extra credit for postings that adhered to the rubric and could earn up to the equivalent of a 15 percent increase in their final exam grades through posts on the board.

The instructor provided a clear rubric for chat board postings to help students engage in a more meaningful dialogue.

Throughout the course, the instructor was a highly visible presence on the board. She consistently monitored it to respond to questions and to confirm or correct postings left by students, as shown in the following example:

> **Student 1:** *"Rank the following items in order of decreasing radius: Na, Na+, and Na-." However, the picture only shows "Na+, Na+, and Na+." I imagine all the ions are the same and have the same size, but when I overlap them as equivalent, it tells me it's incorrect. Any ideas?*
>
> **Student 2:** *I am stuck on the same problem. That ain't right!!!*
>
> **Student 3:** *It seems that the information is not inputted correctly. If you look at the problem and see how they list the "Na, Na+, and Na-," go off the order that is provided in the problem. Ignore the fact that all the blocks technically say "Na+, Na+, and Na+." I did this after I had a failed attempt and I [passed] the second time using the above method…*

> **Instructor:** *Yes, it is absolutely an error in its presentation. I just sent this to the publisher to fix. Actually the squares should read in the order: "Na, Na+, Na-." Thus knowing that Na- > Na > Na+, the correct order should be: third square > first square > second square. If you still cannot get it, let me know.*

When students posed a question on the asynchronous discussion board, the instructor's responses were more prescriptive than they might be in a face-to-face setting. She reported that in the past, the time it took to engage in a back-and-forth discussion increased students' frustration, and thus she now provides complete answers to questions the first time she responds.

Live Chat Sessions

The instructor conducted weekly live chat sessions using Adobe Connect software. The students submitted questions by typing them in, and the instructor spoke into a microphone to respond.

The instructor monitored the discussion board to promptly respond to any issues students were having with the lab.

The live chat sessions provided a regular forum in which students could receive direct help and watch live problem-solving demonstrations. Typically, the instructor provided oral explanations of sample problems while modeling them using Word, PowerPoint, or Paint. The instructor recorded these sessions and posted them on the course website for students who were unable to attend.

Lab Activities

Students had one lab assignment per week, which they completed using either a virtual lab or a take-home lab kit, depending on the experiment. Students used the Late Nite Labs website for experiments too dangerous to conduct at home. The website simulated a laboratory setting with virtual equipment and chemicals that students selected and measured using the mouse and keyboard.

The students wrote up reports for these labs, but the website also provided the instructor with an automated "lab log," which listed steps the students took and how long it took them to complete each step, allowing the instructor to monitor student progress. She monitored the discussion board to promptly respond to any issues students were having with the lab and addressed commonly encountered problems in her weekly chat sessions.

All other experiments were conducted using a specialized lab kit in students' homes. To prepare students for the lab, the instructor provided links to YouTube videos that gave students a sense of what to expect during their experiments. The students took photographs of each step of the experiment and wrote a lab report. They submitted the reports and photos through Blackboard, and the instructor used them to identify mistakes students made that influenced their conclusions.

The home lab activities were unique for an online class in that they provided opportunities for students to interact with each other. Because the kits were expensive, the instructor encouraged students to split the cost of the lab kit and complete the labs in groups of two to three students. Students who worked in these groups reported that they were frequently able to address questions within the group and also meet potential study partners.

Implications and Considerations

To improve students' performance and persistence in their courses, research suggests that online instructors should focus on providing targeted support for students to reach rigorous instructional goals. Establishing a meaningful instructor presence through the effective use of interactive technologies appears to be a particularly powerful strategy for enhancing student outcomes.

Establishing a meaningful instructor presence through the effective use of interactive technologies appears to be a particularly powerful strategy for enhancing student outcomes.

As they design their online courses, instructors should take into account the following observations:

- Students perceive instructors as responsive when they encourage student questions through multiple venues and reply to questions promptly.
- Students make distinctions between technology tools integrated into a course with a clear and valuable purpose and those with no purpose. Instructors can establish this sense of purpose by integrating the technology into regular course activities and by explicitly telling students when and how to use a technology-based resource.
- Infusing audio and video throughout lectures provides multiple ways for students to engage with content and creates a strong instructor presence.
- Live weekly chat sessions allow for personalized instruction and give students the opportunity to get to know their instructor. However, participation in live chats tends to be low. Instructors can establish a flexible schedule of chat sessions and require students to attend at least a minimum number.
- Giving students a clear rubric and incentives for discussion board postings helps to stimulate more meaningful interaction.
- If instructors do not maintain an ongoing presence on discussion boards, students may feel that their participation is a waste of time.
- Students expect and appreciate detailed instructions for assignments and clear, actionable feedback in addition to numeric grades.
- Instructors can improve their online courses and engender a sense of caring by soliciting student feedback about the course and using that feedback to enhance the course.

Endnotes

1. See *What We Know About Online Outcomes* for more information about how community college students perform in online courses.
2. Bork & Rucks-Ahidiana (2013); Jaggars (2013); Jaggars & Xu (2013); Edgecombe, Barragan, & Rucks-Ahidiana (2013)
3. Bork & Rucks-Ahidiana (2013); Jaggars (2013)
4. Jaggars & Xu (2013)
5. Jaggars (2013)
6. Edgecombe, Barragan, & Rucks-Ahidiana (2013)
7. Edgecombe, Barragan, & Rucks-Ahidiana (2013)
8. Jaggars & Xu (2013)
9. Analysis based on a sample of 35 course sections from 23 online courses and transcript data from 678 students who completed at least one of the sections.
10. Edgecombe, Barragan, & Rucks-Ahidiana (2013)
11. Edgecombe, Barragan, & Rucks-Ahidiana (2013)
12. Edgecombe, Barragan, & Rucks-Ahidiana (2013)

Sources

Bork, R. H., & Rucks-Ahidiana, Z. (2013). *Virtual courses and tangible expectations: An analysis of students' and instructors' opinions of online courses*. Manuscript in preparation.

Edgecombe, N., Barragan, M., & Rucks-Ahidiana, Z. (2013). *Enhancing the online experience through interactive technologies: An empirical analysis of technology usage in community college*. Manuscript in preparation.

Jaggars, S. S. (2013). *Beyond flexibility: Why students choose online courses in community colleges*. Manuscript in preparation.

Jaggars, S. S., & Xu, D. (2013). *Predicting online outcomes from a measure of course quality*. Manuscript in preparation.

This guide was prepared by Shanna Smith Jaggars, Nikki Edgecombe, and Georgia West Stacey.
Funding was provided by the Bill & Melinda Gates Foundation.

Community College Research Center
Teachers College, Columbia University
525 West 120th Street, Box 174
New York, New York 10027
Tel: 212.678.3091 Fax: 212.678.3699
ccrc@columbia.edu
http://ccrc.tc.columbia.edu