

The Chancellor's New Robes: Online Education

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Online education is being rapidly embraced as a cash cow for reputable universities. Although there are legitimate advantages to online learning, the data on learning outcomes are scarce. We point out the reasons why high quality, live classes are unlikely to be replaced by online alternatives. However, we do describe the poor teaching practices that can be inexpensively replaced by online courses. We finally point out that best practices and high quality online education are expensive and cannot generate the revenue expected by university administrators.

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Introduction

Online education is the latest innovation in distance learning and is expanding at an astounding rate. Pianko and Jarrett (2012) report that from 2002 to 2012 the number of undergraduate students taking online courses increased by approximately 25 percent. Students report that cost, flexibility in timing, location and availability all contribute to the attractiveness of online education. Online courses have moved into the mainstream and Parker et al. (2011) estimate that 61% of liberal arts colleges, 79% of research universities, and 82% of community college offer some online options.

Is the Online University an Unprecedented Innovation?

We must keep in mind that distance learning is not new and the recent rise in online higher education courses is only the most recent innovation in the expansion of access to education that has roots in the correspondence courses of the late 19th and early 20th centuries. Although the name "correspondence course" evokes ridicule and the assumption of fraud, the first correspondence courses were pioneered in 1874 by Illinois Wesleyan University in an honest attempt to reach out to a broader audience. With the advent of television, came the possibility of offering the distance learner an experience that went beyond the printed page and again universities attempted to reach out to broader audiences of students with the first televised college courses offered by the University of Houston in 1953. Today, adult education through public television has shifted from broadcast lectures to documentary films, but the legitimate educational motives remain the same.

Despite the amount of bandwidth taken up by marketing and pictures of kittens, the world-wide-web does provide public access to an unprecedented amount of information. Hence it is not surprising that distance learning has entered this venue as well. Once again it was a public university that made the first

attempts at computerized learning, with PLATO (programmed logic for automated teaching operations) offered by the University of Illinois at Urbana-Champaign in 1960. However, the interest in online courses did not explode until the for-profit, University of Phoenix began offering degrees in 1989.

What Are the Pedagogic Advantages of Online Learning?

Beyond the goal of reaching a broader student population, there exist a number of legitimate pedagogical and practical benefits for some students. Online courses offer an opportunity for self-paced and student-centered learning. Asynchronous online courses offer students the freedom to work on the course material when they have time, perhaps after work hours or on weekends. Recorded online lectures can be paused at any point so that students can take notes without missing what is explained next. Students can also view video examples or read supplementary materials linked to the lecture. Finally, synchronous discussion threads and synchronous online chatrooms may be less intimidating for those students who have become more comfortable in an online social environment than a live environment.

Student satisfaction with online courses has been well tracked and Hartnett et al. (2011) note that, across the board, online students are intrinsically more motivated than their on-campus peers. This is not surprising because a major difference in these populations is that the majority of online students enroll out of interest in a topic, rather than to fulfill a degree requirement. This intrinsic motivation was correlated with initial engagement and retention. Nonetheless, overall retention rates are much lower in online courses compared to the national average for college students (Herbert, 2006) and the students who complete outcome surveys are, therefore, likely to represent a skewed subset of the population of students originally enrolling in online courses. More importantly, satisfaction is a marketing outcome

that does not necessarily reflect learning. Consequently, there exists much skepticism of the claims of better educational outcomes from online courses.

In response to the repeated claims that there are thousands of studies supporting the efficacy of online education, the US Department of Education commissioned a meta-analysis of research on online learning. The 2010 DOE investigation involved a systematic search of empirical studies documenting the effectiveness of online and distance learning published between 1996 and 2008. The initial search of published research yielded 1132 articles, of which only 176 met three key criteria: they investigated learning taking place partially or entirely over the internet, they included a controlled, experimental design, and finally, they reported data on student achievement or other learning outcomes. Of these, only 99 articles compared face-to-face learning to online education and only 37 articles specifically examined the variation in online learning practices and those effects on the learner at the undergraduate level. This is a far cry from thousands of articles. Furthermore, while the meta-analysis found that students in courses with an online component had modestly better outcomes than students receiving only face-to-face education, these results were not due to any unique characteristic of the online medium, but were attributed to the high motivation of the subset of students who completed online courses, and to the amount of time they spent studying.

Will the Live Classroom Go the Way of Live Theatre?

Prognosticators predicted the demise of live theatre when Edison introduced moving pictures and the demise of movie theatres when CBS began broadcasting television. And yet live theatre flourishes even in the era of Netflix and Youtube. There is an attraction to live experiences compared to remote. But why is the live performance attractive and how might that mechanism explain the pedagogic benefits of the live classroom experience?

Daniel Levitin (2006) suggested that music is a combination of familiar pattern and surprise. More broadly Braude (2013) proposed that our brains have evolved to reward us for recognizing the subtle surprises against a variety of background patterns. This same mechanism is involved in our enjoyment of humor and literature and may also explain the attraction of live performance where there is always the opportunity for surprise. The film *Romeo and Juliet* starring Leonardo DiCaprio and Claire Danes will obviously be consistent between viewings. However, a performance of *Romeo and Juliet* in the theatre will be different every night!

The opportunity for surprise contributes to the heightened attention and alertness associated with the live classroom and this enhances learning. This element is lacking in asynchronous online courses. Additionally, the social aspect of being in class with one's peers is lost in online courses. This social component may explain the attraction of the live setting for a large portion of the population, but does the "face-to-face" experience lead to better education? Goran and Braude (2007) argue that, in addition to visual, auditory and kinesthetic learners, there are also social learners. Essentially, while we may not all seek out a social learning setting, being with others, especially peers, raises alertness and this alone can lead to better learning opportunity. This is consistent with Schutte's (1998) finding that collaborative learning with peers is the key factor in ex-

plaining higher performance of classroom learners compared with online learners and Frankola's (2001) finding that personal connection is one of the most important factors in boosting completion rates. She also reported that NYU students found that the social aspect with their peers was helpful in their studies, and nearly all of the NYU online students who completed online coursework reported that live sessions provided an emotional lift.

Who Is at Risk of Replacement by an Online Course?

Despite the apparent benefit of a live classroom setting, does all education necessarily have to be confined within the classroom? The live setting creates the opportunity for the instructor to make a great impact on the experience of their students. However, not all instructors are influential and inspiring. Consequently, courses that have been taught by a lecturer reading directly from notes or relying solely on the text might be easily replaced by a video of a better lecturer. Furthermore, courses involving repeated practice to enhance memorization and regurgitation might also be easily transferred to the online domain. Neuman (1998) argues that these courses are for "stressing fundamentals as well as helping students gain real skills" and student performance can be easily automated. We propose the general guideline that any course in which student performance can be evaluated with multiple-choice exams is a candidate for replacement by an online offering. We challenge our colleagues to examine their own teaching and consider whether their teaching could be easily replaced with an online alternative. While the mission of many higher education institutions is to create the beginnings of "life-long learning", the courses described above fall short of these institutional goals and instead emphasize memorization of knowledge.

What Do We Look for in the Best Online Courses?

The best online courses are those that creatively engage the student. Excellent online courses contain: synchronous discussions, small class size, qualified discussion leaders and graders, timely grading and feedback on written work, and engaging lectures. Synchronous discussion takes the place of in-class discussions. With discussion, students are able to articulate ideas and analyze the arguments of others. An excellent online course features this aspect of the education process. Furthermore, qualified discussion leaders and graders are necessary to provide quality content for online students. Qualified instructors should be chosen to provide quality content. Additionally, small class sizes allow the instructors to get to know their students on a more individual level. While it is easy to get lost in a lecture hall of 300 students; how much easier in an online class of 300?

The asynchronous features of an excellent online course should include access to exciting lectures, links to related material, high quality graphics, and videos. The paradox is, however, that it is not cheap to incorporate these features into an online course. Graphics and videos, alone, require time and effort to create. Also, in many disciplines, there is new, pertinent, information being generated yearly, requiring materials to be updated. Considering the requirement for low student-teacher ratios, qualified discussion leaders, high quality video and graphics,

and up to date materials it is difficult to imagine how these new robes will earn the high profits that have enticed our administrators.

Follow the Money

Despite the dearth of evidence to support the claims of effectiveness with online courses, many institutions are beginning to sign-up. A majority of surveyed college presidents see potential for growth in online education (Parker et al., 2011) and George Washington University, Boston University, Northeastern University, University of Southern California are just a few of the many high profile intuitions that have established partnerships with online outsourcing companies. One expectation might be that massive online courses allow more students to enroll, thus increasing tuition revenue per class. However, closer examination of Embanet, Brisk Education, Compass Knowledge Group, and other providers of online platforms, reveals a major flaw in the financial reasoning. These companies reap up to 85% of tuition income for the courses they facilitate. Unless enrollments soar, the universities that employ these companies will actually lose a vast amount of tuition revenue.

Furthermore, we must be realistic about the fact that developing massive online courses requires an enormous commitment of time and effort on the part of the faculty who had been originally hired to teach students on campus. Faculty involved in online course preparation quickly discovers that the generation of high quality instructional material is extremely time consuming (Neuman, 1998). On top of this, online course development requires even greater foresight and planning than a live class because students may be working at their own pace and interaction between students and faculty may be infrequent.

The University of Phoenix has shown that one can generate profit by offering courses that depend on the student reading a text and watching videos. In the end, more students enrolled will lead to more tuition dollars. On the other hand, colleges and universities that hope to continue offering high quality teaching and opportunities for learning, must factor in the necessary time and resources.

Conclusion

In conclusion, it is clear that there exist legitimate benefits of online education for some students and that high quality teaching and learning can be achieved through online courses. How-

ever, quality online education is as expensive to produce and to provide as quality classroom education. Unfortunately, the leaders of many top universities are not immune to the appeal of the latest fashion and online courses appear to be little more than the Chancellor's new robes.

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