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The University of Houston Embraces Hybrid Instruction

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Abstract

The University of Houston (UH) has undertaken an ambitious initiative in the use of hybrid instruction. From a pilot of three courses delivered using this instructional mode during the Spring 2004 semester, UH deployed 29 hybrid courses in Fall semester of 2004, and 47 hybrid courses in the Spring of 2005. Nationally, colleges and universities have found that the use of hybrids can reduce costs while improving student performance, retention, and course satisfaction. In this document, a review of the literature is provided and initial experiences with hybrids at UH are discussed.

Introduction

Hybrid instruction has arrived at UH. This innovative approach constitutes the most rapidly increasing mode of instructional delivery in higher education today. Hybrid courses use online coursework to complement a reduced number of class meetings. This approach allows increased enrollment without a concomitant increase in classroom buildings, infrastructure, or services. In addition, hybrids afford students greater schedule flexibility and reduced commute time while still maintaining in-class face-to-face (f2f) interaction.

The UH initiative began with three hybrid courses offered in Spring 2004. Based on the success of these initial pilots, UH expanded its offerings to 29 hybrid courses for the Fall 2004 semester, and 47 hybrid courses in the Spring of 2005. This aggressive plan mirrors a dramatic increase in hybrid offerings in higher education nationally.

Hybrid instruction has been a logical response to two conflicting trends in higher education: 1) burgeoning demand for online instruction and 2) growing concern that fully online instruction may reduce the quality of the educational experience for many students.

Demand for Online Instruction

Increased demand for online instruction has resulted from both “push” and “pull” factors. Push factors are largely monetary. With the cost of higher education on the rise, school administrations are faced with

unrelenting budget pressures. Public institutions rely heavily upon public subsidy to meet expenses; however the public subsidy of higher education has not kept pace with increasing costs. Without these subsidies, state colleges and universities will need to raise tuition to $15,000 annually (Turoff, 1997).

Moreover, as the use of electronic media grows, traditional geographic monopolies are disappearing and competition for student enrollment between institutions of higher education is increasing (Christensen, Anzkwe & Kessler, 2001). Administrators hope that incorporating distance learning (DL) into the school's instructional offerings will increase institutional cost effectiveness and aid in the competition for new students.

Pull factors flow from a growing recognition among students of the value that DL offers them in terms of flexibility and convenience (Daugherty & Funke, 1998). The demographics of college and university students in the U.S. is experiencing rapid and profound change. According to the U.S. Department of Education's National Center for Education Statistics (as cited in Christensen et al, 2001), the percentage of 25 to 34-year-olds enrolled as college undergraduates has increased by almost 33 percent between 1972 and 1994. Between 1976 and 1994, the percentage of undergraduates age 35 and older has also increased by approximately 33 percent according to Duguet (as cited in Christensen et al, 2001). Turoff (1998) adds that there will be an increasing percentage of working college students (versus the traditional full-time student) and these individuals have greater outside commitments that create barriers to "traditional" education. DL courses can provide the flexibility needed by non-traditional students. These students find that completing course work at home and at a convenient time for their schedule makes it possible to integrate their education with their family and life responsibilities (Daugherty & Funke, 1998).

The attraction of DL instruction is not restricted to traditional distance learners. As students realize that the flexibility of DL courses can shorten their time pending graduation, a high percentage of traditional on-campus students are also enrolling in these courses (Turoff, 1997).

The introduction of web-based online instruction adds new factors to be taken into account when judging the potential of DL. Students utilizing online instruction value the opportunity to learn computer-based technologies as an integrated part of instruction (Daugherty & Funke, 1998). Increasingly, the careers for which students are preparing require conversance in these technologies (Webster & Hackley, 1997).

Public familiarity with and access to computers and the internet has also increased dramatically in the U.S. (Ragothaman & Hoadley, 1997). With the rapid expansion of these technologies, their increased pervasiveness, and subsequent availability, accessibility is no longer a major issue (Christensen et al, 2001). Due to these factors, mediated instruction has been increasing at a dramatic rate and online instruction is growing faster than any other instructional technology according to Crossman (as cited in Daugherty & Funke, 1998).

Concerns about the Quality of Fully Online Courses

The dramatic increase in DL has aroused a number of concerns among educators (Reis, Stavitsky, Gleason & Ryan, 2000). One concern is that course quality will suffer with conversion to a mediated format. A number of studies have found that students perceive DL classes as inferior in quality to f2f classes (Thyer, Artelt, Markward and Dozier, 1998). Faculty have also found that mediated courses can require significantly more time to prepare and conduct than do traditional courses (Reis et al, 2000).

Hybrid Courses as a Possible Solution

A growing number of institutions are adopting hybrid instruction as a means to reduce costs and meet student demand for greater schedule flexibility while maintaining or improving the quality of the instruction.

The University Of Central Florida (UCF), for example, has used hybrids to relieve a critical shortage of classroom space (Young, 2002). Rather than embark on expensive classroom construction, UCF has converted over 100 courses to a hybrid format. The UCF hybrid courses meet half of the time in classrooms

and half of the time online. While the major factor motivating this conversion was shortage of classroom space, instructional outcomes have improved as well. Data from UCF's Research Initiative for Teaching Effectiveness indicates that "on the average, web-enhanced courses have higher success rates (percentage of students obtaining an A, B, or C) and lower withdrawal rates than their comparable face-to-face courses" (RITE, 2001).

More evidence that hybrids can reduce costs while maintaining or improving the quality of instruction is provided by the results of an ambitious project in hybrid conversion funded by an $8.8 million grant from the Pew Charitable Trusts in April, 1999. Known as "A Program in Course Redesign," the initiative aimed to use technology-mediated instruction to increase retention and improve student performance for lower division courses in Research 1 universities. All 30 redesign projects supported through this grant focused on large-enrollment introductory courses that have the potential to affect a significant number of students and generate substantial cost savings for the universities. Rigorous evaluation was performed comparing the outcomes of redesigned courses with those of courses with the same content delivered in a traditional (pre-redesign) format. The evaluation found statistically significant improvements in student learning in 22 of the 30 projects. Learning outcomes equivalent to those of traditional courses were registered in the remaining 8 hybrid courses. Of the 24 projects that measured retention, 22 reported a noticeable decrease in drop-failure-withdrawal rates, ranging from 10 to 20 percent. All 30 institutions reduced costs by about 40 percent on average, actual savings ranging from 20 to 77 percent. Other positive outcomes reported include better student attitudes toward the subject matter and increased student satisfaction with the new mode of instruction. The success of the "Program in Course Redesign" initiative demonstrates that information technology can be used to address the academic problems experienced by first-year students at most institutions. Additionally, it demonstrates that colleges and universities can use hybrid courses to efficiently handle more students, and at a reduced cost, without jeopardizing the quality of the education (Twigg, 2004).

While initial conversion to hybrids requires time and money, savings over time can more than recoup the initial investment. This is the conclusion reached by Michael Maher, a professor in the graduate school and a member of the Mellon Advisory Board at the University of California, Davis. Maher is conducting an economic analysis of the school's hybrid conversion project. "One way to look at costs is the way economists do it - start up costs amortized over time. If you look at it that way, you find lower costs for hybrid courses than traditional courses," Maher says (as quoted in Murphy, 2002).

Not Just for Graduate Students Anymore

Traditionally DL programs have been most commonly offered at the graduate level. Undergraduates tend to lack the self discipline and self direction needed to excel in DL courses. As the experience of the Pew-funded study demonstrates, hybrids can make online learning a more viable option for undergraduate students as well.

The University of Wisconsin provides us with another example of the effectiveness of the hybrid model at the undergraduate level. During 1999-2001, the University of Wisconsin (UW) System Curricular Redesign Grant Program funded a collaborative project involving UW-Milwaukee and four UW-College campuses (Rock County, Sheboygan, Washington, and Waukesha). They identified 17 faculty members to design, develop, and teach the hybrid courses. The instructors represented a wide variety of disciplines. The courses they converted to hybrids ranged in size from less than 15 students to over 200 students. These courses covered all undergraduate levels from freshmen through senior, and the students enrolled included both traditional college-aged and older adult learners (Garnham & Kaleta, 2002). The faculty adopted various approaches to the hybrid model, based on their own instructional styles, course content, course size, and course goals. They reduced in-class time by 25% to 50%, using several different hybrid models. The models included: eliminating one class per week throughout the semester, meeting for several weeks and then not meeting for several weeks, and cutting non-productive time from a longer evening course. Qualitative assessments of student learning indicated better papers, higher quality projects, and better performance on exams (Garnham & Kaleta, 2002).

Different Hybrid Models

Hybrid models offered at most institutions fall within the definition "a reduced number of face-to-face in-class hours complemented by online instruction." At UH, hybrid courses are officially defined as combining "traditional classroom instruction with a significant amount (over 50%) of instruction delivered through educational technology. Hybrid courses meet approximately half of the time in a traditional face-to-face classroom environment with the remainder of the course presentation, interaction, activities, and exercises delivered through various electronic means (online, WebCT, and/or video formats)" However, as the UW example demonstrates, the ratio of f2f online instruction and the manner in which each instructional mode is used may vary greatly from one school to another. For example, the Global Masters of Business Administration offered by Duke University's Fuqua School of Business combines online communication and resources with intensive residential periods on campus to engender group cohesion and social learning (Ryan, 2002). Some models utilize classes that meet as often but with shorter class periods than their traditional counterparts. Some courses will meet once per week with a major utilization of course online modules supplied by the textbook publisher. These modules provide a rich array of content, including audio and video resources and self-assessment tools.

Exemplary Art History Hybrid

A more detailed description of an exemplary hybrid course at UH may be of interest. This large art history survey course has reduced the number of class meetings from twice a week to once per week. The face-to-face meetings are used by the instructor to provide an over-arching perspective on the subject matter. A more intensive treatment of specific topics is supplied to students through online streaming video. Three to five-minute clips provide a graphic representation of the given concept accompanied by narration. The script and narration for a given video were provided by a faculty member with specific expertise in that topic area. Course instructor, Dr. Rex Koontz, explains that the videos allow him to bring experts into his class via streaming video in a way that would be logistically impossible to arrange in a traditional manner. Dr. Koontz has also achieved a level of integration between his course and a leading art museum that is unique. For example, students are assigned to visit the Museum of Fine Arts, Houston to participate in "explorations" several times during the semester. Explorations are individually customized tours to view art objects specified by the instructor. Each art object is complemented by a digitized sound file delivered through earphones and a one page, descriptive leaflet called an "Art Card" produced by the Museum's educational staff. The Art Card describes the object in relation to the evolution of art forms as well as in relation to the people and culture that created it. The final project in the class requires students to engage in authentic learning assessment by writing a museum quality Art Card for a museum art object of their choosing.

Another Hybrid Model

Several classes will use a model that requires fewer class meetings for the students but the same number of class meetings for the instructor. For example, a literature class of thirty will be divided into two sections of fifteen. One section of fifteen students will meet with the instructor on Tuesdays and the other section will meet on Thursdays. This will allow for the type of seminar style interaction found so essential for involved and critical discussion of literature. Informal space is being arranged for these seminar sections leaving the classroom free for use by another class. Automated online quizzes will encourage students to read and engage with the assigned texts and the online content before participating in the in-class seminar discussion.

What Belongs On-line?

The challenge in hybrid class design is to identify what aspects of a particular course should be delivered f2f and what aspects can be delivered as well or better online. This mode of instruction is too new and studies too few to provide definitive answers to these questions. From our experience at UH and a review of the literature, the following patterns can be identified:

Delivery of Course Content

Online content can be provided to supplement or even to replace textbook reading assignments. All of the resources found in a traditional textbook-text, photographs and illustrations-can be easily provided to the student online. However, online content can offer much more and be far more engaging than any textbook. Text can come alive with animated illustrations. Imagine being able to view an animated cross-section view of a human circulatory system. Watch the red oxygen-rich blood as it is pumped through the arteries, and then turn blue as it returns through the veins to the heart. Or imagine viewing an animated cross-section of an internal combustion engine as the pistons rise and fall in the cylinders. Content can also be enhanced with digital film clips and sound files bringing video and audio into the learning experience. Animation, video, and audio technologies not only enhance and energize instruction; they also address the diverse learning styles and learning preferences of the students (University of Montana, 2003).

Online text can also be interspersed with interactivities that require students to engage with the content and which provide immediate feedback in regard to comprehension and retention (Murphy, 2003). Course content can contain hyperlinks that make it possible to integrate resources from across the country or around the world. One link might take students to view the treasures of the Louvre in Paris. Another link could take learners to online demonstrations and exhibits offered by National Aeronautics and Space Administration (NASA), in Houston. Sands (2002) concludes that activities that actively engage the students, require them to solve problems, collect and analyze data, and converse or respond with other students and the instructor constitute a superior learning environment. Sands also points to computer simulations and online exercises as tools that provide students with rich learning environments which provide immediate feedback (Sands, 2002).

Class Preparation

Online tools can be used to encourage students to engage with and master the content before attending a scheduled class meeting. An array of effective tools is offered in each of several course management systems available on the market. “The most obvious impact that technology has made on higher education in the past five years has probably been the widespread adoption of course management systems, such as WebCT and Blackboard,” according to Murphy (2002). Sands (2002) lists online syllabi, lecture notes, electronic grade books, and posting of office hours as management enhancements that provide improved services to the students and instructors. By utilizing a course management system, the instructor can present online activities that are systematically designed to promote student engagement with course material. Students may be required to take an automated online quiz or to participate in an online discussion pertaining to the course content before physically attending the class session. Online discussion can be achieved through electronic bulletin boards or through an online chat room. Implementing this format ensures that students come to class prepared. This provides a learning experience that is of higher quality for both the student and instructor. Utts, Sommer, Acredolo, Maher, and Matthews (2003) state that “the best use of class time is for review of material the students have already studied (online) during the previous week.” When students participate in class activities prior to attending class, they are prepared for the class meeting where they can review the material, ask informed questions, and participate in a meaningful discussion of the course material (Murphy 2003, Utts, et al., 2003).

Learning Reinforcement

Online activities can also be used to reinforce learning that has taken place in the classroom. By requiring that students engage in even a modest amount of online activity based on in-class instruction, retention can be improved dramatically. Online activities, to improve retention, may range from a simple automated quiz to advanced simulations. A reflective discussion of the activities or assignments from a previous class or a forthcoming class session may also be used. Threaded discussions provide students the opportunity to view the responses of other students, be exposed to multiple perspectives, and perhaps form a new point of view or solidify a view already held. According to Martyn (2003), “discussion-based teaching methods can be effective for long-term retention of knowledge and for higher-level cognitive and affective objectives, because students actively engage in the process” (22). An asynchronous discussion provides the learners the opportunity to reflect on a response or responses and prepare an informed contribution to the discussion, based not only on opinion, but also with integrated course content and supporting reference materials. This can improve the quality of the discussion and the learning process (Martyn, 2003). “The

power of the hybrid course model is its flexibility and its pedagogical effectiveness. Because it emphasizes active learning techniques, it increases student interaction with other students and the instructor" (Aycock, Garnham, Kaleta, 6).

What to Save for the Classroom?

What portions of instruction might be better left to the traditional classroom? Recitation, instructor feedback, and clarification of challenging concepts may be addressed more easily or effectively face-to-face. In-class meetings may also help to engender a sense of community more effectively than online substitutes. Regular class meetings may further prove crucial to keeping some students motivated and on task. It is hard to replace the social pressure that comes from knowing that you may be facing your instructor and classmates unprepared.

Conclusions

Hybrid instruction is still at a pioneering stage. Institutions of higher education are funding experimentations with hybrids and successfully solving problems. However, it should be noted that regulatory and accreditation agencies have yet to update policies and regulations in response. The Texas Higher Education Coordinating Board (THECB), which is responsible for overseeing and regulating higher education in Texas, recognizes hybrids as online courses, thus relieving institutions from contact hour rules for these courses. However, hybrids, like traditional course, also need state funding of infrastructural support such as classroom space, parking and student services. The THECB is aware of the special challenges posed by hybrids and it is speculated that the THECB and other regulatory agencies will soon modify policies to facilitate this promising new mode of instruction.

At UH, the Department of Institutional Research-Effectiveness is currently implementing a plan that assesses student perceptions and satisfaction, student outcomes and retention rates in hybrid courses. The plan is to administer attitude surveys, conduct student focus groups and, where possible, compare test scores and grades with corresponding f2f courses. Qualitative data through interviews with course instructors and instructional designers is also being collected. This data will afford more far-reaching conclusions than are possible at the time of writing this contribution.

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