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Enriching Student Experience Through Blended Learning

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Overview

The definition of blended or hybrid learning has been argued and debated at workshops and in print. At this writing, the preponderance of practice favors a description of bringing together face-to-face classroom instruction with Web-based activity in which classroom time is partially replaced by the Web-based work. The Arizona State University Web site for this learning pattern informs students that such courses combine “face-to-face instruction and web- or computer-based learning in an educational environment that is non-specific as to time and place” (Arizona State University, Overview of Hybrid Courses).

With the widespread use of course management systems, bringing Web activities into course content and delivery has for some observers become commonplace; however, data on the frequency of such activity is elusive because of wide variations in transcribing and other record keeping. But the definition of substituting online activity for classroom time becomes a useful boundary. In recent years, providing Web links and activities for students is an educational commonplace; substituting that for classroom interaction marks blended learning.

The battles over the efficacy of residential learning versus online learning have disappeared with the quiet adoption of blended learning. While an occasional attack surfaces, the attraction of mixed delivery mechanisms has led to implementation, often without transcribing and virtually without announcement. The University of Central Florida (UCF) has carefully analyzed sound practices of residential, blended, and online classes in order to achieve equivalency among delivery modes.

While blended learning may not have been student-driven at its inception, the practices can meet student preferences and expectations as they move in the direction of several consumer preferences: convenience, access, and control. Devices such as iPods and services such as “third screen” (video, computer, and phone) delivery further enable remote access and interaction. The challenge, of course, falls to institutions and faculty to meet the expectations of students for convenience and access while developing appropriate pedagogical uses and quality levels for the new technologies. Blended learning labels the shifting venue and communication patterns that have occurred in the culture. We have moved from lecture halls to homes, cars, and iPods offering anytime, anywhere delivery while increasing interaction as well. The impact of these changes on learning depends to a large extent on the faculty transformation of content and interaction to the newer technologies.

Variations can be found through the nearly 4,000 institutions in the U.S. higher education galaxy. Indeed, those that work with corporate training programs might prefer the much broader concept of blended learning in that sector. Elliott Masie (Masie, 2002, p. 59) wrote that blended learning “is the use of two or more distinct methods of training” that may “include combinations such as:

- Blending classroom instruction with online instruction
- Blending online instruction with access to a coach or faculty member
- Blending simulations with structured courses
- Blending on-the-job training with brown bag informal sessions
- Blending managerial coaching with e-learning activities.”

Significantly, the preceding paragraph in this handbook decries “single-method learning” and argues that “blended learning adds significantly greater opportunity for the learner to master the material and move towards transfer and performance” (Masie, 2002, p. 59).

Blended learning, much like single-method learning such as large lectures, provides learning opportunity for some students (and not others) and effectively delivers some material (and not others). Blended learning in its common form of combining classroom and Web activity serves a broader spectrum of learning styles than either one alone, and in some practices it begins to offer the many opportunities that are evolving as the world of e-learning.

Highlights of Blended Learning

Although mixed delivery systems have existed for some time (for example, Fielding Institute and the Western Behavioral Institute), a widely known example of blended learning comes from UCF. In 1996, in large part because enrollment growth outpaced facility capacity, blended learning was added to the face-to-face and online offerings. Led by Joel Hartman, Chuck Dziuban, and Steve Sorg, careful assessment of student learning and faculty effectiveness supported the delivery of content through the three modes—classroom, online, and blended.

They saw the necessity for training and supporting faculty as part of the effort to employ parallel delivery systems, addressing the question of what difference the three delivery modes would make. For that campus, at least, the question of equivalent delivery has been put to rest. By and large, a course taught through face-to-face, blended, or online delivery does not offer a statistically more or less effective learning opportunity. Individual students, of course, may perform differently with one system or another, just as they may do better in lecture, discussion, or seminar classes in the face-to-face world (Dziuban, Hartman, & Moskal, 2004, pp. 3, 5–6).

Growth

The growth of blended learning depends on both faculty choice and institutional use. For example, where blended learning has blossomed because of the convenience factor for students—less commuting, fewer parking problems, and so forth—the impetus comes from the institution. At the University of Tennessee, Knoxville, for example, the faculty revision of a Spanish course responded to student preferences while diminishing hand-grading and offering the opportunity for testing and assessment strategies, according to Julie Little, interim assistant CIO (J. K. Little, personal communication, November 16,

2005). Blended learning has developed because of pedagogical concerns for effective delivery, and faculty have often (quietly) developed delivery patterns that recognize the content variation.

The growth, and in some cases the very rapid spread, of blended learning across many institutions from community colleges to research universities arguably springs from the flexibility of the pattern. While the definition offered above applies to most of the varieties of this phenomenon, the variations in structure, support, and purpose suggest that examples will help us understand the factors promoting growth. This bulletin has drawn on interviews from a sample of blended-learning practitioners and from the work of Carol Twigg in the National Center for Academic Transformation (NCAT) course redesign project (<http://www.thencat.org/>).

Quality

Unlike the appearance of online courses and programs and even the adoption of course management systems, blended learning has not received much notice in the media. Further, few critics have come forward to proclaim the heresy of this marriage of delivery systems. Perhaps the concept of improving learning has discouraged potential criticism. While other motives are mentioned, the possibility of increasing the quality of learning for more students is frequently cited.

At Penn State, for example, John Harwood, senior director, Teaching and Learning with Technology at Penn State, believes that lectures in the introductory statistics course by faculty and recitation sections led by teaching assistants failed to address differences among student learning styles or to encourage active learning (J. Harwood, personal communication, November 17, 2005).

The introduction of a blended-learning model replaced some lectures with computer-mediated workshops as well as computerized testing, Web-based materials, and participatory learning. Students were engaged in collaborative learning and hands-on experience with statistics problems. The purpose of the redesigned course was to increase learning effectiveness.

The negative reaction of a few students presented an encouraging view of the changes: one student remarked in an evaluation, "I came to learn; your job is to teach. Now, teach, dammit!" Another lamented that in this "terrible course...I had to learn everything myself." According to John Harwood, Penn State is proud of these "criticisms," revealing the very changes that faculty had hoped to achieve—increased student responsibility for learning, and fewer faculty lectures.

Sally Search, professor of mathematics at Tallahassee Community College offered a similar picture of the composition course that moved to a blended format. She singles out the peer interaction, writing about "real" things, and writing for an audience as elements that improve the quality of the course. As a result, the success rate has increased, the standards have been raised, and the course is "much better." Students are more engaged, while faculty spend less time on group instruction and more on individual instruction (S. Search, personal communication, December 14, 2005).

These two examples of quality change are easily multiplied, since blended learning is most often adopted to change the quality of learning in addition to factors such as convenience, facility usage, and student (and faculty) satisfaction; however, addressing the effectiveness of learning comes only through substantial faculty efforts to take advantage of the technology.

Effective Learning

The extensive work at UCF on the effectiveness of blended learning presents the data and analysis often missing in higher education. The research has been precise and extensive. The institution demonstrated that the blended-learning courses that were critical to a university with a mushrooming enrollment could be the academic equivalent of other courses. Student success, faculty and student satisfaction, and other benefits can be achieved. Effective learning, according to UCF and other institutions, can occur when support and evaluation are provided to faculty and students. Twigg's careful work substantiates this over a wide variety of institutions and disciplines (Dziuban, Hartman, & Moskal, 2004, pp. 5–6).

Pedagogy

Chris Dede, then at George Mason University and now at Harvard University, addressed some of the possibilities of employing emerging technologies. He pointed out that “well-designed learning experiences using several instructional media with differing characteristics...enable all students to utilize their most effective ways of learning” (2000, p. 15). Blended learning amounts to a step in that direction, moving away from the single delivery system that inevitably favors one segment of any student population.

Just as important is Dede's final point that

the real power of these media comes not from automating information transmission, but from enabling students' collaborative, guided construction of meaning. Information technology is the only practical means we have of making such rich human experiences affordable and scaleable across the full population of educators. (Dede, 2000, p. 17)

Blended learning, used appropriately for each discipline, moves toward that goal. Like online learning and perhaps every delivery mode, the assessment of learning effectiveness must be included to ensure pedagogic practice.

Examples of exploring the potential of the power that Dede described can be found in many institutions, including in new statistics courses at Penn State and Ohio State University, as well as Spanish courses at the University of Tennessee, Knoxville, and Portland State University.

Convenience

The Maricopa Community College District has very successfully introduced blended learning to a population that was eager for just such delivery. Ron Bleed, retired CIO of Maricopa, has commented at length about the advantages of blended learning to students and to the institution whose goal is to serve larger numbers of students. Bleed

believes students benefit from the convenience of mixed delivery courses and that the mixed delivery helps the institution more effectively manage its physical facilities. Mixed delivery systems have led Maricopa to enroll more than 15,000 high school students under a dual-enrollment policy. Bleed also argued that the “16-week, fixed-seat-time course” is the “biggest barrier to student success” (Bleed, 2005).

Diversity

Urban community colleges often serve very diverse populations. Sally Search attested that the traditional format of the college composition course didn't address the individual needs of students. However, the redesign permitted greater writing time, increased individual attention, and higher interaction among students. The greater attention to the needs of individual students achieves what many lecture or discussion formats cannot (S. Search, personal communication, December 14, 2005).

The University of New Mexico general psychology course found similar benefits through “low-stakes” quizzes. The quizzes became an important learning opportunity for many students. The online delivery of this material permitted individuals to work at their own pace and repeat quizzes as necessary or desired. Gordon Hodge, associate chair for undergraduate programs in the psychology department, confirmed the importance of this element of the course redesign (G. Hodge, personal communication, November 16, 2005).

Student Satisfaction

Student satisfaction is reportedly very high in most of the institutions sampled. Perhaps that result is not surprising, given the high value placed on convenience and the frequently low attendance of many lecture courses. Furthermore, the satisfaction with blended courses might be a reflection of the student attitude that has emerged in the ECAR student surveys on technology and learning. In those surveys, students have indicated preference for a “moderate” inclusion of technology in their courses. The interviews and comments from students included in the study emphasized the importance of having both face-to-face interactions and technology. Perhaps blended learning matches the stated preferences, although the survey did not specify such an alternative (Kvavik & Caruso, 2005, p. 57).

In the psychology course at the University of New Mexico, where the number of lectures was originally cut from three to one, the students are said to have strongly objected. When the pattern was changed to retain two of the original three lectures, student objections diminished. The attendance at lectures did not increase, by the way. Hodge remarked that students view lectures in much the way many Americans view our National Parks: even if we don't visit them, we insist on their being preserved (G. Hodge, personal communication, November 16, 2005). Again, the findings of the ECAR study (of lectures, not of national parks) seem confirmed.

Student satisfaction with blended learning doubtless stems in part from the convenience factor, whether the students live on campus or commute. The three Flex-Net models of the University of Phoenix vary with the geography of student dispersion, recognizing that convenience for an urban commuter differs somewhat from convenience for an out-of-

town commuter. The models incorporate different patterns of face-to-face meetings with online work (H. Christensen & S. Porter, personal communication, November 14, 2005).

But student satisfaction rests on other factors as well. As mentioned above, the University of New Mexico uses low-stakes quizzes extensively in the introductory psychology course. Students may repeat the quizzes as they wish and reportedly consider these online instruments a major learning opportunity. Other institutions such as Portland State and the University of Tennessee, Knoxville, report similar acceptance/enthusiasm for the electronic resources available as part of the blended-learning structures.

Faculty Satisfaction

Faculty satisfaction with blended learning is more difficult to measure. While the innovators unhesitatingly point to the support within their institutions, they are ready to acknowledge criticism often from within the departments or projects that are implementing blended learning. Without careful surveys or broad and intensive interviews, any judgment of faculty satisfaction cannot be supported with useful data. Suffice it to say that faculty who have adopted blended learning seem to find a significant following among students and believe the quality of learning can be enhanced. Faculty dissatisfaction with blended learning and faculty reluctance to adopt blended learning cannot easily be determined. Innovators, however, report that adoption by other departments or schools within their institutions is slow at best. What conclusions can be drawn from that behavior can rightly be regarded as speculation: a suspicion of technology, a lack of institutional support or motivation, and an inexperience with technology surely play some part.

Productivity

Technology occasionally has been seen as a promising aid to increasing faculty productivity, a goal of many in this time of budget crunches. The NCAT work successfully demonstrated the possibility of managing cost through various technology applications, as departments achieved significant cost savings. Interviews with representatives of blended projects and courses, however, confirmed that increasing faculty productivity has rarely been a goal. Significant shifts in responsibilities do occur, as faculty are involved less frequently in lectures (for example, Penn State) or in working on grammar (for example, the Portland State Spanish course). Such shifts, however, often result in reassignment rather than changing the overall productivity of faculty.

Given the tasks of preparation, including the significant course redesign work and often the development of appropriate online activity, increases in productivity in the short run are highly unlikely. The burden of faculty training in using technology and the redesign of lectures into Web-based activity, for example, consume a great deal of time, particularly for the first offering and for subsequent adjustments. Beyond that, in the statistics course at Penn State, for example, significant software development may be necessary. The extensive efforts needed to transform courses from traditional formats to blended learning are unlikely to increase faculty productivity. The question, however, may be premature; few institutions seem ready to force such change.

Faculty Workload

Faculty workload increases, particularly for the initial offering of blended courses. The redesign of courses to accommodate the change from lecture to Web-based activity often requires extensive faculty development and training. The greater preparation demanded of faculty to offer content in a new way is compounded by an increased workload that remains once the learning curve is mastered: responding to student e-mail or chat-room activity, for example, means extended faculty hours. Interviews for this research bulletin indicated that the motivation for the faculty to engage in transforming courses to a blended-learning model relates to the improvement of student learning through the use of technology.

Facilities

Rapidly growing institutions, notably UCF and Maricopa, have seen blended learning as a way to increase the capacity of facilities. When UCF was growing faster than it could add classroom space, blended learning was a great solution. Theoretically, if one in three lecture sessions were replaced by Web-based activity, a classroom was released for an hour. Across a large institution, the facility savings could be significant.

The same possibility is true for a program, of course. The Portland State course in Spanish, for example, was intended to expand enrollments by increasing capacity.

Cost

Relatively few of the accounts of blended-learning practices focus on cost issues. For whatever reason, accounting for cost increase or decrease often receives little concern. Perhaps that simply reflects a traditional habit, particularly in public higher education. While the careful and extensive accounts in the NCAT place great emphasis on cost issues, reflecting the dual purposes of improving learning and reducing cost, institutions in our interviews evidenced little interest in departmental or institutional cost.

Some of the cost savings expected in the NCAT projects are impressive. Tallahassee Community College, for example, expected to save approximately 40 percent. Such cost savings were achieved in shifting work from full-time faculty to adjuncts (an institutional goal) and by decreasing the amount of time faculty spent in diagnostics, preparation of lectures, grammar instruction, monitoring progress, grading, making class announcements, and responding to class issues. Further savings came from shifting basic skills work from faculty and staff to software. Overall costs were also cut through the increase in student success; fewer students needed to repeat the course.

Transcripts

The issue of transcribing bears on institutional hurdles as well as the difficulty of identifying the occurrence of blended learning. In a few institutions, blended learning is transcribed as such. UCF transcribes blended-learning courses. But a sample suggests that most institutions either enter them on the transcript simply as courses or as distance or online courses. Such practices make it very difficult to survey blended-learning course offerings.

The issue extends to the bulletins of course offerings, where some campuses insist that faculty members announce blended courses so that students have accurate expectations; others—perhaps most—have no such policy. Faculty autonomy is preserved, but student information suffers. The committed supporters of blended learning strongly prefer announcing blended-learning structures: students know what to expect, and those who are aware of their learning styles can match them with course offerings.

Hurdles

Few institutions mention difficulties with accreditation, but it must be noted that one representative indicated problems with a regional accreditor that is reluctant to accept blended-learning courses as equivalent to face-to-face instruction. Given the initial hesitancy of some accreditors to accept online courses and the earlier special treatment for distance learning, institutions must be aware of potential problems. Since blended courses are quickly becoming accepted offerings and even transcribed as “standard” courses, the difficulty may be quickly resolved. Perhaps the greatest hurdle to broader recognition of these offerings comes from intradepartmental issues—the reluctance of some faculty to accept the pattern—and from institutional positions of ignoring such course offerings. One university president has suggested that he would prefer not to explain to the public that faculty teaching blended courses spend fewer hours in the classroom.

Purpose

In a statement submitted by Fairfield University for the Pew application process (now administered by NCAT), the university describes a General Biology course to be redesigned as a “traditional course [that] suffers from a number of academic deficiencies. The most serious is the lack of a student-centered, inquiry-based pedagogy.... Preliminary data indicate lower comprehension of material and lower retention of students than should be expected” (National Center for Academic Transformation [NCAT], 2000–2002). The university’s purpose in the redesign is “to enhance the quality of education for students by 1) establishing interactive student-centered learning environments, 2) better facilitating the transfer of information, and 3) exposing students to the wealth of biological information available today.” Software, collaborative team effort, assessment, student evaluation, and electronic feedback are among the elements of the new course. The emphasis on “higher order cognitive skills” characterized the effort. The results were confirming, as the drop, fail, or withdraw rate dropped, the number of students enrolling in the second semester increased, and costs were reduced (NCAT, 2000–2002).

The pedagogical purpose of the course redesign echoes Dede’s description of the opportunity blended learning offers and similar purposes at some of the other institutions working with blended learning. The courses at Portland State, the University of Tennessee, Penn State, Ohio State, and many others propose changes that reflect a grasp of improving learning for diverse student populations.

Blended learning, which at times may seem a vehicle to increase convenience or classroom utilization, has been used for pedagogical purposes in the examples cited in this bulletin. Furthermore, doubtless in part because of the leadership provided by the NCAT effort, the projects are typically bolstered by careful metrics.

What It Means to Higher Education

While the pattern of “classic” blended learning continues, new technologies may well alter that development quickly. Podcasting has become popular for some students, permitting them to hear lectures without attending them. Such behavior may allow students to achieve some of the purposes of a blended course—delivering course content to students anywhere, anytime. Such customization, however, may achieve student but not institutional (cost, productivity) satisfaction.

The demands placed by innovations in technology should not be underestimated. Each significant innovation potentially impacts the delivery of content and student participation, if not basic pedagogy. While some faculty may have the skills to incorporate such new opportunities, others need support and training that not only allows them to use the technology but also helps them see the potential benefits in student learning. Institutional policy may properly offer such support, but institutional resources must be readily available to faculty.

The future of blended learning may replicate the extended variety of delivery mechanisms occurring both in the corporate sector and in the technique already being used in higher education. The models exist but are not well known. The few examples provided in this summary only hint at the broad variety now practiced.

Some of the people interviewed for this bulletin pointed out that blended-learning structures allowed them to make significant changes in the delivery of content, leading to much more effective learning than the old structures provide. If such changes become more common, blended-learning patterns could alter the basic course structures.

Online learning, driven primarily by student preferences, has grown—by higher education standards—at a very rapid rate. Blended learning, a more pedagogically oriented innovation with many of the advantages of online learning, could well become a standard practice favored by both faculty and students. Institutional support, however, will determine how quickly it spreads and whether it achieves its promise of improving student learning.

Key Questions to Ask

- How does your institution measure faculty interest in blended-learning courses/programs?
- Which parts of your institution are providing recognized leadership for blended learning that extends to faculty and support staff?

- What level of fiscal and staff resources are available to support interested faculty?
- How do blended-learning courses support institutional goals?
- Which institutional research or evaluation processes are prepared to collect and analyze data on blended-learning efforts?
- Which quality and cost-monitoring processes are in place?

Where to Learn More

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