"Half Bricks and Half Clicks": Is Blended Onsite and Online Teaching and Learning the Best of Both Worlds?

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Abstract: Blended learning, or combined onsite and online learning, is increasingly popular in higher education. This literature review investigated its effectiveness compared to traditional teaching and learning, concluding that with retention and achievement, blended learning is similar or slightly better; with interaction and satisfaction, blended teaching and learning are more effective.

The allure of online learning is understandable given the realities of life in the new millennium. Students are packed into classrooms and on campuses meant to accommodate far fewer. Over 19 million students are expected in 2015 in degree-granting U.S. institutions of higher education, an increase of 2 million over current levels (U.S. Department of Education, 2003). Of the top 30 degree-granting postsecondary institutions with the highest enrollments, 6 are in Florida (U.S. Department of Education, 2006). Mid-career adults are returning to school; in 2014, over 3 million students age 35 and over are projected (U.S. Department of Education, 2003). Online learning is particularly attractive to these students, burdened with competing priorities of work, family, and school. For the 87% of students who commute to their schools (National Clearinghouse of Commuter Programs, 1999), the time in cars on crowded roads, the escalating cost of gas, and the burden of cars on the environment become a disincentive to drive to class. Even younger students, "digital natives" (Prensky, 2001, p. 1), make natural online learners; undergraduates average 15 hours weekly on the Internet; 90% access the Internet daily and have had over 8 years of experience with computers (Educause, 2003).

Aside from demand for postsecondary education, online learning has grown in size and scope due to the convenience of learning on demand—needing little more than an Internet connection—along with more effective delivery methods (Gallagher & Newman, 2002). Online education transcends constraints of time, location, and travel, allowing for flexibility and control among instructors and learners. Businesses, corporate trainers, and the military have hitched themselves onto the online bandwagon. In a survey of adults, 74% confirmed interest in online courses due primarily to their reputation for convenience of self-paced learning (Epstein, 2006). Over half of the leaders in higher education rate online learning as essential in their long-term strategies; quality of online programs is perceived as equal to or better than onsite programs (Allen & Seaman, 2004). About 56% of postsecondary institutions offer online education to over 3 million students (U.S. Department of Education, 2006). An expected 40% per year increase in fully online students will result in billions in tuition revenues (Gallagher & Newman, 2002).

But learning exclusively online has its drawbacks. The dropout rate of online learners exceeds the already high dropout rate of onsite learners. Of students who begin online courses, 50% do not finish due to lack of support and problems inherent in online learning (Jones, 2006). Successful online learners must exhibit elevated levels of independence and accountability; less successful online learners feel overwhelmed and isolated in self-directed courses (Howland & Moore, 2002). Credibility and legitimacy of online degrees are a concern (Epstein, 2006), as acceptance in the workplace of degrees earned online remains a goal. For-profit institutions work openly to separate themselves from the tag "digital diploma mills" (Noble, 1997, p. 1). A

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National Education Association (2000) faculty survey found that online teaching was perceived as less effective in developing problem-solving skills, student interactivity, oral presentations, and verbal skills than onsite teaching. Very problematic is the lack of class interaction inherent in online instruction (Picciano, 2006) for instructors who never meet their students. The relationship between faculty as mentors and students as scholars can be compromised (Young, 2002).

Between traditional onsite and online learning is *hybrid* or *blended* learning. Blended *learning* is defined as teaching and learning that "combine face-to-face instruction with computer-mediated instruction" (Graham, 2006, p. 5). Blended is emphasized over hybrid because it conveys the balance and harmony associated with blended (Osguthorpe & Graham, 2003). Online learning may be synchronous, with learning occurring in real time, as with Web seminars, or asynchronous, with self-paced learning, as with discussion forums. Learning online involves more than one instructional method, such as group instruction, self-paced instruction, simulations, lecturing, and coaching (Reynolds & Greiner, 2006). Course management systems including WebCT and Blackboard are used. The "half bricks and half clicks" (Bleed, 2001, p. 18) label for time spent in brick-and-mortar buildings compared to time spent clicking on the computer may not refer to an equal split. The following breakdown of terms and online time has been developed: *traditional* courses, 0% of course time; *Web facilitated* courses, with Web-based technology assisting an onsite class, 1—29% of course time; *blended/hybrid* courses, merging onsite meetings with online content, 30—79% of course time; and *online* courses, with little or no onsite meetings, 80% or more of course time (Allen & Seaman, 2004).

The purpose of this research was to investigate blended learning in higher education. Specifically, two questions guided this research: (a) How effective is blended learning in higher education? (b) How does it compare to traditional onsite courses?

Method

A search of relevant literature in ProQuest, including ERIC, and CQ Researcher based on keywords hybrid learning, blended learning, and higher education was performed in November 2007. Citations and document texts were scanned. Abstracts were reviewed and chosen if articles contained authors' empirical research, either qualitative, quantitative, or both. Articles were discarded if they contained merely descriptive or anecdotal information, centered on workplace rather than educational settings, or claimed to contain information on blended courses yet were simply Web-facilitated. A manual search of Bonk and Graham (2006) resulted in five relevant chapters. Four major areas emerged from this review of research.

Results

This section consists of the results of the review regarding the two research questions. Four areas of research emerged: (a) retention, or students' ability to persist in courses; (b) interaction, or the active communication and engagement between and among faculty and students; (c) satisfaction, or the degree to which courses met students' and instructors' needs and expectations; and (d) achievement, or learning outcomes related to grades, scores, or skills.

Retention

Retention of traditional students in higher education depends on the type of institution and the definitions applied, with dropouts averaging 40-45%; for online students, the dropout rate is estimated to be 10-20% higher (Tyler-Smith, 2006). Blended courses thus far have enjoyed greater success in this area, with better or similar dropout rates to comparable onsite courses. At one university, the withdrawal rate was 4.3% for blended courses and 4% for comparable on-site courses depending on the discipline; students who withdrew reported problems with technology, a gap between their low expectations of course workload and the

reality, and personal challenges (Dziuban, Hartman, Juge, Moskal, & Song, 2006). Withdrawal was 6% for students taking a blended course; the ability to complete work at their own pace, peer and instructor interaction, and mentoring were reasons cited for the low dropout rate (Singh & Reed, 2001). Withdrawal rates were slightly lower for a blended course (4%) compared to a traditional one (6%); the low dropout rate was speculated to result from high levels of engagement between students and the instructor, who assisted with technical problems and communicated informally online (Hensley, 2005). At another university, students dropping the blended courses feared technology or course workload (Garnham & Kaleta, 2002).

Interaction

Essential to the learning process is the student/student and student/teacher interaction, and building this community of learners is more challenging in online courses (Vesely, Bloom, & Sherlock, 2007). But students in blended courses felt interaction was better than in traditional courses (Riffell & Sibley, 2003). Students who feel silenced in onsite class discussions are more apt to contribute online (Garnham & Kaleta, 2002). Seeking help can be a determining factor in successful learning; help is available virtually around the clock from the instructor and classmates (Kumrow, 2007). Furthermore, through their experiences in the blended course, students better understand the significance of managing their time, cultivating their study environment, regulating their effort, seeking appropriate support, and learning from classmates (Kumrow, 2007). Students reported that their online interaction with classmates greatly assisted in comprehension of course materials; central to how they felt about blended learning was the quality and quantity of student and faculty interaction (Owston, Garrison, & Cook, 2006). In blended courses, students are often required to engage actively by reading and responding to discussion forum postings that become a permanent record of their participation and learning, rather than passively attending classes. Perceptions of interaction from faculty are also positive for blended courses. Faculty renovate their teaching methods by placing onsite lectures online and adding supplementary activities to aid student learning (Garnham & Kaleta, 2002). Blended teaching and learning transforms education from “a command and control structure to a connect and collaborate environment” (Moskal, Dziuban, Upchurch, Hartman, & Truman, 2006, ¶ 12) that is more student-centered than faculty-controlled. For faculty, the quality and quantity of interaction is better in blended courses (Dziuban et al., 2006; Owston et al., 2006).

Satisfaction

Support for blended learning is overwhelming. Just one study noted no difference in the overall learning experience for those taking courses online, onsite, or in a blended format (Banks, 2004). In all other studies, students are satisfied or more satisfied with blended courses, citing convenience and flexibility as reasons for their popularity. Of their blended learning experience, 86% of students in one study were either “satisfied” or “very satisfied” (Dziuban et al., 2006, p. 203). Only 13% of students would consider an exclusively online course after their blended learning experience; over two-thirds reported it was more effective than a comparative onsite class (Hall, 2006). Over two-thirds of students in blended learning courses appreciated the ability to control their learning pace and time; 80% would recommend a similar course (Garnham & Kaleta, 2002). Satisfaction is higher due to better learning support, suggesting the importance of emotional engagement in student satisfaction (Lim, Morris, & Kupritz, 2006).

Both students and faculty report that online activities encourage critical thinking and foster flexibility and freedom (Owston et al., 2006). Faculty report great satisfaction—80% in one study—particularly regarding increased convenience, improved connection to students, better course management, and enhanced knowledge of technologies (Dziuban et al., 2006). As

courses become more learner-centered, faculty are empowered to use new methods, increase efficiency and organization, and encourage student participation (Garnham & Kaleta, 2002). Though planning and technical preparation is more time-intensive for blended courses, faculty expand their teaching repertoire with new activities and methods (Garnham & Kaleta, 2002).

Achievement

Student achievement in two studies is reported to be equal: acquisition of knowledge and pre- and post-test learning of course material were the same for working adults in online, onsite, and blended formats (Banks, 2004), and overall learning and applying learning was identical for students in blended and online courses; however, online learners left less supported and engaged and experienced more roadblocks to learning (Lim et al., 2006). Equal grades were earned in another study: 93.3% of students earned grades of "C" or higher in blended classes, equal to the 93.3% in traditional courses though higher than the 92% earned in online courses (Dziuban et al., 2006). With all other studies, achievement was higher. With Web technology and small onsite learning groups, students scored higher on a final exam than their onsite counterparts, along with a positive attitude about their experience (Taradi, Taradi, Radic, & Pokrajac, 2005). Students using online discussions and studying onsite performed as well or better at several measures of learning (Webb, Gill, & Poe, 2005). Compared to a traditional onsite course, students in blended learning courses earn higher (Tuckman, 2002) or significantly higher (Kumrow, 2007) course grades. Students and faculty felt that learning increased in a blended compared to a traditional course (Owston et al., 2006), as they "wrote better papers, performed better on exams, produced higher quality projects, and were capable of more meaningful discussions" (Garnham & Kaleta, 2002, ¶ 8). Students in a blended learning class scored 10-12% higher in projects than students in an onsite class, as determined in a blind review process (Martyn, 2003). Students improve their ability to apply theory to practice in blended learning courses (Garnham & Kaleta, 2002) and had higher attendance rates compared to those in traditional classes (Riffell & Sibley, 2004). Courses also become more writing-intensive due to required online assignments (Sands, 2002).

Discussion

This literature review supports the statement that regarding retention and achievement, blended learning is similar or slightly better than traditional onsite learning. With interaction and satisfaction, blended teaching and learning are more effective.

Retention and achievement of students in courses benefits everyone; dropping out or doing poorly negatively affects institutions and society aside from students. So it is noteworthy that retention and achievement are the same or slightly better in blended courses. All cited studies on retention are about four-year universities with competitive entrance requirements; research is lacking for community colleges and for-profit institutions with open-enrollment entrance requirements other than high school diplomas and basic skills. This academically underprepared population is substantial: remedial courses in reading, writing, or mathematics are offered at 76% of postsecondary institutions and serve 28% of incoming freshmen, 13% of them through online education (U.S. Department of Education, 2000). These students typically have lower retention and achievement rates; they may fare differently in blended environments.

The finding that interaction is better in blended environments is remarkable: considering that onsite time is reduced, it follows that interaction would be negatively affected. If knowledge is socially constructed and learning occurs optimally with assistance from peers and more knowledgeable others (Vygotsky, 1978), then online learning appears to limit knowledge construction. Importantly, individual assistance from experts is needed for novice learners to function unassisted (Vygotsky, 1978); online, this assistance is physically absent. With blended

instruction, however, students engage with faculty and peers in physical and virtual modes using written and verbal functions; assistance in class onsite could extend for days online. Blended learning combines the onsite opportunity for presentations and in-depth discussions with the online possibility of the same, in written or verbal format. The combination also benefits shy students or second language learners who feel inhibited in expressing ideas in class; online, without a face or voice that others can scrutinize or dismiss, the playing field becomes leveled. The popularity of social networking sites such as Facebook and MySpace underscores the notion that sustained interaction can occur without the benefit of bricks and mortar.

The finding that satisfaction among students and faculty is better in a blended format is not so striking: with far greater convenience and control than in traditional courses, many students and faculty would be satisfied, especially when learning outcomes are comparable. Both Wisconsin (Garnham & Kaleta, 2002) and Central Florida (Dziuban et al., 2006) have broad support systems for technical issues and encouragement from peers and administrators, so it is no surprise that faculty have been sold; both schools point to support infrastructure as critical in their success. Research on faculty working in isolation may show otherwise.

Conclusions and Implications

The future of online education is blended learning (Bonk, Kim, & Zeng, 2006). Most companies use some form of blended learning, but most postsecondary institutions do not; however, both are predicted to double their offerings (Bonk et al., 2006). This is significant, as institutions must better prepare students to learn using pedagogical methods such as active learning, problem solving, and collaboration that parallel their future workplaces (Bonk et al., 2006). Given research concluding that blended learning is equal to or better than traditional learning in four areas, educators should take steps to support this learning at their schools; otherwise, students may seek their education elsewhere.

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