

## More Effectiveness in Blended Learning

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**Abstract:** Online education is likely to continue to grow in popularity in the years ahead, and both schools and universities are expected to take an especially strong interest in "Online" courses. And it's necessary to know the level of student satisfaction with online versus traditional courses as well as finding an effective strategy for student success and retention. Recent studies comparing student performance, satisfaction, and persistence between online and face-to-face classes course found no significant difference in grades between online and traditional classes; however, students in the online course were significantly less satisfied with the course on several dimensions. Among the most often cited are physical isolation, lack of social support or interaction, and high attrition rates. The intent of this study was to examine differences (quality & satisfaction) between online and traditional classroom learning for undergraduate course and to highlight the effectiveness of blended-style education. Specifically, the study explores the difference between three methods of learning (E-learning, face-to-face and blended-style of education) which is measured by final course grades and student satisfaction which is measured by student evaluation of instruction ratings. Moreover the article explores the concept and benefits of blended learning through the review of literature.

**Key Words:** Online, face to face, blended-style

### Introduction

Online education is likely to continue to grow in popularity in the years ahead and Distance-learning technologies that open up access to education are going to be vital in improving Ireland's educational standing and create the knowledge basis for economic success in the future. On the other hand while many universities had implemented learning management systems and got involved in innovative e-learning projects, the jury was still out on whether or not technology was transforming the learning experience or simply e-enabling existing teaching methods. "The question is to what extent are e-learning and digital technologies anticipating and underpinning innovation in teaching itself?" (skelly, 2007). Nearly two million college students were enrolled in online courses in fall 2003, a 19% increase from 2002, with significant growth expected to continue (Allen & Seaman, 2004). Online delivery of the typical large undergraduate lecture class is considered administratively cost effective (Riffell & Sibley, 2005). Online education is likely to continue to grow in popularity in the years ahead, and both schools and universities are expected to take an especially strong interest in "blended" courses that combine computerized lessons with traditional classroom instruction (Cavanagh, 2007). And it's necessary to know the level of student satisfaction with online versus traditional courses as well as finding an effective strategy for student success and retention.

Russell (1999) found no significant differences between the effectiveness of distance education and that of face-to-face classes in 355 comparison studies. Distance education, as defined by Russell (1999), includes the delivery of education through a variety of electronic communication forms, including television and the internet. Recent studies compared student performance, satisfaction, and persistence between online and face-to-face classes (McLaren, 2004; summers, Waigandt, & Whittaker, 2005). Summers et al. (2005) found no significant difference in grades between online and traditional classes; however, students in the online course were significantly less satisfied with the course on

several dimensions. Family and consumer sciences (FCS) educators have joined the discussion and have enumerated the benefits of online instruction (Reiboldt, 2001). Students enrolled in an online section of an introductory FCS undergraduate consumer economics course scored higher on the achievement posttest than did students enrolled in a traditional classroom setting (Johnson, Burnett, & Rolling, 2002).

Although benefits of e-Learning are many, drawbacks exist if relied upon exclusively. Among the most often cited culprits of over reliance on e-Learning in online programs are physical isolation, lack of social support or interaction, and high attrition rates (Pastore, 2002). Franks (2002) asserts that educators who have tried both the traditional lecture format and a distance education approach become aware that neither method by itself is sufficient for every learner, every instructor, and every course. This inadequacy leads to strong possibilities for the effective application of a third option: a blended learning approach, which attempts to integrate the best from both modes. The goal of developing a blended learning strategy is to synthesize the best possible blend of instructional strategies, methods, and media.

The intent of this study was to examine differences (quality & satisfaction) between online and traditional classroom learning for undergraduate course and to highlight the effectiveness of blended-style education. Specifically, the study explores: Is there a difference between different methods of learning (E-learning, face-to-face and blended-style of education) which is measured by final course grades and also student satisfaction which is measured by student evaluation of instruction ratings? Moreover article explores the concept and benefits of blended learning through the review of literature.

### **Review on Blended-Style Education**

Today's teachers face many external pressures and challenges in their practice and in their assumed roles. Due to ICT integration in the work place, the way of teaching, the way of apprehending knowledge, and the practice of teaching and supervision has revolutionized. The teacher's role is not only to provide information or knowledge in age of Internet, but also to invent new ways and strategies to deliver knowledge which are more skill oriented and based on personal experiences. This will allow the teachers to manifest their expertise by coaching, monitoring, guiding and facilitating. There lacks a theory of online learning (Anderson, 2004) and a valid e-learning model which take into account the aspects of language and ways of communicating. Language and communication are the two aspects which constitute the essence of culture (Vygotsky, 1978; Wertsch, 1985). Therefore, we reiterate that existing online instructional designers and instructors are living in a time of transition, but, are not embracing the shifting paradigm.

There has always been a large gap between theory and practice in education. There are only few valid research outcomes on the effectiveness of e-learning. Therefore it is difficult to convince and motivate people to practice e-learning. In addition, e-learning practices have rarely drawn on evidence. Moreover, there is an assumption that ICT brings a new way of learning and teaching, so it should accompanied by new pedagogies and new approaches and strategies (Sutherland et al., 2004). Consequently there has been

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a rapid change in present day education which has brought about innovative ways and approaches to teaching and learning, based on individual craftsmanship; therefore, these practices are not valid in a wider context (Design-Based Research Collective, 2003; Clark & Estes, 1999). They are not explicit and transmittable. Most of them have not been based on valid pedagogical principles and systemic instructional design approaches and therefore, are difficult to reproduce or re-use (Oubenaissa-Giardina, 2007).

The idea of blending different learning experiences has been in existence ever since humans started thinking about teaching (Williams, 2003). What has recently brought this term into the limelight is the infusion of web-based technologies into the learning and teaching process (Clark, 2003). Which have created new opportunities for students to interact with their peers, faculty, and content, inside and outside of the classroom (Vaughan, 2007).

Recently, blended learning has been defined as the combination of face-to-face and online learning (Williams, 2002). Ron Bleed, the Vice Chancellor of Information Technologies at Maricopa College, argued that this is not a sufficient definition for blended learning as it simply implies "bolting" technology onto a traditional course, using technology as an add-on to teach a difficult concept or adding supplemental information. He suggested that instead, blended learning should be viewed as an opportunity to redesign the way that courses are developed, scheduled, and delivered in higher education through a combination of physical and virtual instruction, "bricks and clicks" (Bleed, 2001). This sentiment is echoed at the University of Calgary where blended learning is considered a "blending" of traditional teaching approaches (i.e., face-to-face classroom learning activities) and learning technologies (i.e., Internet information and communication technology), resulting in a reduction of "seat time" (Garrison, Kanuka, & Hawes, 2002).

In higher education, this definition of blended learning is often referred to as a hybrid model. At the University of Wisconsin in Milwaukee, hybrids are courses in which a significant portion of the learning activities have been moved online, and time traditionally spent in the classroom is reduced but not eliminated. The goal of these hybrid courses is to join the best features of inclass teaching with the best features of online learning to promote active, self-directed learning opportunities for students with added flexibility (Garnham & Kaleta, 2002). A recent survey of e-learning activity found that 80% of all higher education institutions and 93% of doctoral institutions offer hybrid or blended learning courses (Arabasz, Boggs, & Baker, 2003, p. 2).

Dziuban, Hartman, and Moskal (2004) stressed that these types of blended/hybrid courses are not traditional "distance education" courses as they are not offered entirely online or at a distance. Also, they are not simply a traditional class with a supplemental web site since the time spent online replaces some of the classroom time. In addition, this type of blended learning is not just about transferring information to the Web but instead involves extensive course redesign.

There is not a set formula for the reduction of class time or the use of technologies within a blended learning course. Variations exist due to the nature of the course content and the intentions of the teacher responsible for the course (Dziuban, Hartman, Moskai, Sorge, & Truman, 2004). In some blended courses, the time for each class session is reduced or one class per week is eliminated while in others, in-class sessions occur only every second week or at certain points throughout the semester (For more details see Bukley 2002).

Izadkhah (2007) in his survey on succeeding of student in different methods found that the grade of student in Tehran university of Iran is comparable to or in some cases better than face-to-face. He added that blended courses have the potential to increase student learning outcomes while lowering attrition rates in comparison with equivalent fully online courses. Table 1 presents comparison data showing success rates.

**Table 1 Percentages of Students Succeeding in Face-to-Face, Blended, and Online Courses at Tehran University**

	Fall 2005	Winter 2005	Fall 2006	Winter 2006
Face-to-Face	91	93	91	89
Blended	91	96	94	91
Online	89	93	90	87

Source: Izadkhah, 2007

Forootan (2006) attempt to compare the rate of withdrawal rates among three methods of learning among student of Kerman University in Iran. Table 2 shows the results of his research.

**Table 2 Percentages of Students Withdrawing from Face-to-Face, Blended, and Online Courses at Kerman University**

	Fall 2004	Winter 2004	Fall 2005	Winter 2005
Face-to-Face	6	3	4	5
Blended	6	2	3	4
Online	10	6	8	6

Source: Forootan, 2006

### **Benefits of Blended-Style Education**

The model of blended learning that emphasizes active learning and a reduction of classroom time is based on the concept of hybridization, the bringing together of two dissimilar parts to produce a third result. In the case of an effective blended learning course, these two dissimilar parts are the online and face-to-face classroom components (McCray, 2000). When they are successfully combined, the potential result is an educational environment highly conducive to student learning.

Since this type of blended course combines face-to-face and computer based learning opportunities, teachers are able to use a variety of instructional techniques. Computer-based technologies can be used to selectively present case studies, tutorials, self-testing



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exercises, simulations, or other online work in place of some lecture or lab material. There are those who suggest that engaging students in these types of online learning activities also changes the nature of the in-class sessions (Meyer, 2003). As a result, the focus of the classroom shifts from a presentational format (i.e., lecturing and information dissemination) to one of active learning (i.e., discussion and debate). Dodge (2001) stated that this form of active learning "involves putting our students in situations which compel them to read, speak, listen, think deeply, and write" (p. 6).

This reduction in class time has not resulted in high drop rates, which has been at times a criticism of completely online courses (Carr, 2000). In fact, longitudinal studies of course withdrawal rates at the central university of Florida indicate that blended courses have lower drop out rates than do fully online courses (Dziuban, Hartman, Juge, Moskai & Sorg, 2005). Levine and Wake (2000) suggested that these lower withdrawal rates are due to the support structure within the classroom (i.e., face-to-face accountability). Students who have been involved in blended learning courses are generally very positive about their experiences. At the University of Wisconsin, Milwaukee campus, 80% of the students who took a blended learning course indicated they thought the experience was worthwhile and that they would recommend a course offered in a blended format to others (Aycok, Garnham, & Kaleta, 2002). The principle reason that students gave for their high level of satisfaction was the time flexibility provided by a blended format. Time flexibility was defined as the ability to control the pace of one's learning, the convenience of scheduling coursework, and a decrease in time spent commuting (Garnham & Kaleta, 2002).

The students surveyed liked being able to control the pacing and location of their learning. They liked the blended design because it provided them with the flexibility to work from home. Working from home was perceived much more positively than working from other locations, such as campus computer labs or workplaces (Garnham & Kaleta, 2002).

The blended design also provided students with a much greater range of course scheduling options because of the reduction in face-to-face class time. This convenience of scheduling is increasingly important for the growing number of students who have multiple responsibilities such as work and family commitments (Vaughan, 2007).

Several research studies have demonstrated that blended learning designs, which have been created through a faculty development program, contribute to improved learning outcomes for students (Twigg, 2003a; Dziuban et al., 2005; Gamham & Kaleta, 2002). In the United States, the Pew Foundation has sponsored a study to investigate how large enrollment, introductory courses can be effectively redesigned using a blended format. The program involved 30 institutions and 20 of these institutions reported improved learning outcomes and 10 reported no significant difference (Twigg, 2003b). In addition, 18 of the study institutions demonstrated a decrease in student drop-failure-withdrawal (DFW) rates compared to the face-to-face only sections (out of 24 institutions which measured DFW changes).

Qualitative research studies at the University of Wisconsin in Milwaukee (Garnham & Kaleta, 2002) also suggested that students learn more in blended courses than they do in comparable traditional class sections. Teachers responsible for the blended sections report that students wrote better papers, performed better on exams, produced higher quality projects, and were capable of more meaningful discussions on course material. Sands (2002) stated that because of the text-based nature of web-based discussion forums and e-mail, blended courses became "de facto writing intensive courses when the teachers work carefully to integrate the online and classroom components" (p. 1). Spika (2002) added that the increased opportunities for self-directed learning in the blended model helped students develop project and time management skills.

### **A Quantitative Effort**

#### **Methodology**

Participants were economics students enrolled in a University of Tehran\* during the first semester of 2005 and both semesters of 2006. The number of students enrolled was 127 and 130 and 140, respectively; the profile of students in each semester was approximately the same. The course had the same instructor, textbook, lecture slides, quizzes, exams, assignments, and grading methodology. The difference was that the 2005 class was delivered in a traditional classroom face-to-face setting, and the first semester of 2006 class was delivered online but in the second semester of 2006 students were enrolled in a blended learning style with a similar context to two others style. Students who enrolled in the online class and blended style were required to complete their exams in a traditional classroom setting. Students who withdrew from the courses were excluded from the studies; therefore, the numbers of students included in the analysis were 120 in the 2005 class and 122 and 139 in the 2006 classes.

Data were analyzed using descriptive statistics and t tests with a level of significance of  $p < .05$ . Final course grades for both the face-to-face and online classes were expressed as percentages. Cronbach's alpha reliability for the analysis of the final grades was .9038. The "Student Evaluation of Instruction (SEI)" instrument has been used at the university for 20 years. The instrument uses Likert-type scale items designed to measure students' assessment of the instructor's teaching and overall opinion about the course. Students were asked to rate the 16 items from "Excellent" (1) to "Poor" (5). Lower means indicated a more positive assessment of the item. Cronbach's alpha reliability for the instrument was .9018; therefore, the instrument was deemed reliable. The university does not use a separate SEI instrument for online and blended classes; therefore the same instrument was administered in a classroom setting prior to the final exam for three different classes. SEI participation was voluntary.

#### **Results and Implications**

The mean final course grade was 79.56 for the face-to-face class and 76.45 for the online class. This difference was not statistically significant, but the mean final course grade for blended learning had an unprecedented increase and reach to 92.25 which had a significant difference with two other methods of learning.

The students' overall evaluation of the instructor was 2.72 out of 4 for the face-to-face class and 2.81 out of 4 for the online class; for the course overall, online class students'

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mean score was 2.85 versus a mean score of 3.06 from the face-to-face class. The differences of the overall SEI scores were not statistically significant. Notably, only one sub-item in the evaluation of the instructor was considered significant: The extent to which the student learned a great deal from instructor. The mean score was 2.60 for the face-to-face class and 2.99 for the online class. Predictably, students in the online class felt they had not learned a great deal from the instructor compared to students in the traditional class. A similar research that had been conducted by Hauck (2006) in the School of Fashion Design and Merchandising at Kent State University for assessing of difference between online and traditional learning confirm the above results. Whereas mean score of blended learning was 3.44 out of 4 which had a significant difference with two others methods. Consequently this result indicates more effectiveness of learning in blended-style. In addition blended method has lower drop out rate than two others methods.

The results support the literature that blended learning (combination of online and face-to-face classes) is more effective on student achievement. Although no statistically significant differences in student satisfaction were found on online and traditional style but there was a significant difference between blended learning with two other styles.

### Summary and Conclusion

Although blended learning courses are associated with improved student learning outcomes and cost savings, realizing these learning designs across the institution come with significant challenges. An institution must create the necessary policy, planning, resources, scheduling, and support systems to ensure that blended learning initiatives are successful (Garrison & Kanuka, 2004). A policy framework should be developed, which explicitly states how blended learning supports the vision, values, and principles of the institution. The scheduling of courses in higher education institutions is already a challenge and considerable thought must be given to the development of a scheduling format for blended courses, which allows for meaningful and flexible reduction of classroom time. As previously indicated, support for students and faculty is a key component of blended learning. Technology training and support should be available for students and professional development support for the faculty (Vaughan, 2007).

There are some clear benefits in the use of online courses. Administratively, online instruction may continue to be cost-effective. These courses could be easier to schedule and deliver using graduate students and part-time instructors. From a student satisfaction and success perspective, many students like the convenience, time flexibility, and independent learning (Reiboldt, 2001). On the other hand, there are students who are less satisfied with online classes than the traditional face-to-face learning environment, especially in some introductory courses of undergraduate programs (McLaren, 2004; Summers et al., 2005). The use of online instruction may not be appropriate for some introductory courses (Hauck, 2006). Based on our results perhaps a hybrid format that uses both online and traditional face-to-face delivery methods in introductory courses can create a sense of community, foster relationships, and help with student success and retention. Future research and debates should center on the merits of using online instruction in introductory courses and the impact on learning.

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