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Mirror Mirror on the Wall, Is Blended Instruction the Best of All? Students' Perceptions of Blending Face-to-Face and Online Instruction

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According to Ayala (2009), blended learning is "the purposeful integration of traditional (i.e., face-to-face) and online learning in order to provide educational opportunities that maximize the benefits of each platform and thus more effectively facilitate student learning. The purpose of this study was to explore students' perceptions of taking courses that utilized a blended instruction approach. Study participants consisted of 36 undergraduate students enrolled in teacher education programs. There were 18 seniors, 12 juniors, and 6 sophomores. For all 36 participants, this was their first blended course. Their perceptions were attained through a survey that compared instruction delivered online to those presented face-to-face. The categories addressed included student learning, course objectives, instructor involvement, media elements, overall learning experience, and advantages. The survey measured if both online and face-to-face instruction were effective in the blended courses, as well as to ascertain advantages over courses offered purely online or face-to-face.

Keywords: blended instruction, online instruction, face-to-face instruction, student perception

What is the best course delivery method for students enrolled in a teacher education program? Is it online, face-to-face, or a blending of the two? It is not uncommon for instructors to engage in discourse relative to the effectiveness of online instruction compared to that of traditional, face-to-face instruction. However, should this discourse shift to the effects of blended instruction? Blended instruction is an instructional delivery method where more than one delivery mode is adopted for optimizing learning outcomes (Singh & Reeds, 2001).

The U.S. Department of Education (DOE) conducted a meta-analysis of the research literature from 1996 through July 2008, which was titled *Evaluation of Evidence-Based Practices in Online*

Learning: A Meta-Analysis and Review of Online Learning Studies (2009). One of the key findings in this study was that, "Instruction combining online and face-to-face elements has a larger advantage relative to purely face-to-face instruction than did purely online instruction" (U.S. DOE, 2009, p. xv). This type of instruction is referred to as *blended*. Blended instruction is an approach that combines the benefits of online and classroom instruction (Oh & Park, 2009).

This paper describes students' perceptions of a blended course central to effectiveness. To begin, a review of the literature is provided to expand the definition of blended instruction, to report methods and findings from DOE's meta-analysis, and to examine current research. Next, the research study is described and its connection to the meta-analysis is delineated. To conclude, the findings are reported in conjunction with educational implications, limitations, and areas for future research.

Literature Review

In the DOE's meta-analysis, blended instruction is defined as "online learning components that are combined or blended with face-to-face instruction to provide learning enhancement" (U.S. DOE, 2009, p. 51). "Blended learning endeavors to purposefully and seamlessly integrate online and traditional learning in order to create a distinct, new approach with its own merits" (Ayala, 2009, p. 279). As El-Deghaidy and Nouby (2008) pointed out, blended learning, in this sense, "can lie anywhere between the continuum anchored at opposite ends by fully face-to-face and fully online learning environments" (p. 989). Because of this, the amount of online instruction used and the strategies and technologies employed for a blended learning environment can differ from class to class and school to school (Picciano, 2009). However, Picciano (2009) emphasized in his definition the importance of combining online and face-to-face activities and elements for instruction in a "planned, pedagogical…manner" (p. 8). This focus on intentionally using elements in both mediums of instruction for learning purposes and pedagogical reasons is paramount.

What is important to note in the DOE's definition of blended instruction is the idea of learning enhancement. "Blended learning aims to reach beyond the potential benefits of each individual approach (face-to-face/online) to create a new 'whole' and transform both the structure and method to teaching and learning" (Ayala, 2009, p. 279). As Lim, Morris, and Kupritz (2007) noted, the "major thrust of blended [instruction] is to overcome the shortcomings of online" learning by using different sequences and strategies for delivery of instruction, both online and face-to-face, in order to maximize the potential for learning (p. 28). If done well, blended learning combines the benefits of face-to-face and online learning, while excluding the negatives of both as well. As such, using the best of both mediums provides an opportunity to enhance learning, as the DOE's meta-analysis contends.

Blended instruction presents several instructional advantages by combining the benefits of online and face-to-face instruction. To support this, Delialioglu and Yildirim (2007) viewed blended instruction as a combination of classroom and online instruction in which instructors can pursue their pedagogical goals by mixing benefits of two instructional modalities. Inclusion of online instructional elements "offers rich educational resources" for instruction, such as abundant multimedia and communication tools, as well as allowing "access to content and instruction at any time, from any place" (U.S. DOE, 2009, p. 1). The DOE (2009) also found that the inclusion of online learning "is much more conducive to the expansion of learning time than is face-to-face instruction" (p. xvii), which has been

shown to be a significant factor in improved learning. There are also indications that online simulations (Casteneda, 2008) and online individualized instruction opportunities (Nyugen, 2007) are more effective compared with face-to-face environments. While there are several online learning benefits, students still tend to prefer the interactions with instructors and peers found in face-to-face instruction (Mentzer, Cryan, & Teclehaimanot, 2007; Peterson & Bond, 2004). When designed well, blended instruction can utilize all these individual benefits together and optimize the learning potential of a course. The DOE meta-analysis found that "blends of online and face-to-face instruction, on average, had stronger learning outcomes than did face-to-face instruction alone" (U.S. DOE, 2009, p. 19). Along with this, blended instruction has also been found to be more effective for student learning compared to a purely online format (Zhao, Lei, Yan, Lai, & Tan, 2005). However, there is some caution in how to interpret these results (U.S. DOE, 2009, p. xvii). They indicated that the greatest potential for improving student learning and increasing effectiveness of instruction could best be achieved through a blended approach for instruction. Consequently, “researchers have concluded that a mixture of face-to-face and online instructional formats is the best solution for instructional problems and needs, accelerating the students’ learning process” (Oh & Park, 2009, p. 327).

An important factor to blended instruction is instructor involvement. Instructor involvement emphasizes the amount of presence during instruction. In fact, blended instruction “was aimed at improving online learning environments where learners can be easily disoriented due to a lack of communication or direct guidance” (Oh & Park, 2009, p. 327). While this aspect was not found to be a significant factor in the DOE's meta-analysis, one study found that "the degree of instructor involvement is a significant distinguishing quality of effective and ineffective" learning for online and blended instruction (Zhao et al., 2005, p. 42).

Another important factor often discussed with blended learning is the use of media elements. While the debate over the impact multimedia has on learning is nothing new (Clark, 1994; Kozma, 1994), the most recent data seemed to support Clark's (1994) argument that media has no effect on learning, but is simply a carrier of content (p. 40). Even so, the design and combination of multimedia elements are important for effective learning to take place (Clark, 1994). Zhang, Zhou, Briggs, and Nunamaker, Jr. (2006) demonstrated this point in their research. They found that learner control of the interactive elements online showed significant improved performances compared to those who did not have control (Zhang et al., 2006). Another important thing to consider with media elements is that there are new forms of skills and knowledge that students and teachers need to have in order for successful learning to take place (El-Deghaidy & Nouby, 2008; Zhao et al., 2005). So, it is important to understand that media is indeed an integral part of the design of blended learning, but that it is the design and use of the media alone that will make the difference.

While blended instruction provides many unique opportunities for learning, there are several challenges that should be considered when using it in higher education . Oh and Park (2009) discussed how "faculty attitudes toward the use of technology…is…one of the biggest challenges" concerning the implementation of blended instruction (p. 332). Along with this, it is believed there is a need to change the organizational culture in many higher education institutions in order for blended instruction to be accepted (Graham, 2006).

Some reported reasons for the negative views instructors and institutions have towards a blended approach included: faculty workloads, time commitment needed to create blended instruction, lack of instructional and technical support, faculty pedagogical aversion to technology use, and insufficient training in the use of blended instruction (Graham, 2006; Oh & Park, 2009). Higher education institutions need to address these issues, or it may be difficult to achieve widespread success implementing blended instruction.

Garrison and Kanuka (2004) summarized the essence, potential, and challenge of blended learning:

> Blended learning is both simple and complex. At its simplest, blended learning is the thoughtful integration of classroom face-to-face learning experiences with online learning experiences. There is considerable intuitive appeal to the concept of integrating the strengths of [these two platforms]…. At the same time, there is considerable complexity in its implementation with the challenge of virtually limitless design possibilities and applicability to so many contests…. The real test of blended learning is the effective integration of the two [platforms]…. Blending learning is inherently about rethinking and redesigning the teaching and learning relationship…. It is not enough to deliver old content in a new medium. (pp. 96-97)

Purpose of the Study

Blended instruction has become a common instructional delivery format in most universities, yet there is a lack of evaluation procedures for blended instruction (Rovai, 2003), specifically for the process of identifying the degree to which the learning objectives are achieved (Oh & Park, 2009). Beyond this, Delialioglu and Yildirim (2007) stated:

> Even though there is an increase in the number of blended learning environments, and the existing literature generally showed positive attributes of these instructional practices, the field lacks detailed and empirical studies on the effectiveness of the learning process in these environments. Therefore, to see the whole picture and determine the contributing factors to learning in blended learning environments, there is a need to examine hybrid [blended] courses from different dimensions and contribute to related literature in this respect. (p. 139)

The purpose of this study was to ascertain students' perceptions of blended instruction while enrolled in courses using a blended approach. Their perceptions were investigated by comparing lessons delivered online to those presented face-to-face to determine if both methods of delivery were effective in the blended course, as well as to ascertain if this type of instruction had advantage over courses offered purely online or face-to-face. Thus, the research questions guiding this study included:

1. Is blending online and face-to-face instruction an effective delivery method? More specifically:
   a. Are online and face-to-face lessons equally effective in a blended course?
   b. Does blended instruction have an advantage over purely face-to-face instruction and online instruction?

Method

Participants and Settings

Participants in this study included 36 undergraduate students enrolled in teacher

education programs at an upper Midwest university in the United States with a student population of approximately 15,000. Demographically, there were 18 seniors, 12 juniors, and 6 sophomores. For all 36 participants, this was their first blended course. Program representation included special education (n=12), early childhood education (n=10), and elementary education (n=14). Students were selected to participate in this study based on their enrollment in three courses using blended instruction that were taught by three different instructors. Stratified sampling procedures were employed to identify participants who had taken a class face-to-face and an online class. As a result, all 36 students had taken courses that were purely face-to-face and online.

These blended courses combined online and face-to-face elements by alternating weekly lessons to include one week of face-to-face followed by a week of online. Lessons were of equal proportion in this 16 week study: 8 face-to-face lessons and 8 online lessons. The content of these respective courses were central to assessment, methods, and collaboration, with the course descriptions below:

- *Assessment and Program Planning*. 3 credits.

  A study of the principles and practices for: (1) obtaining diagnostic information on school-related problems of a student; (2) assimilating this information and prescribing appropriate alterations based on continuous measurement.
- *Methods and Materials: Pre-Kindergarten.* 3 credits.

  Exploration of curriculum, methods and materials for use in pre-kindergarten educational settings.
- *Collaborative Relationships: Home, School and Community*. 3 credits.

  A course appropriate for anyone working with families, early childhood educators, general educators, special educators, related service personnel, administrators and outside agency personnel.

The *Assessment and Program Planning* course is most often taken by elementary education majors receiving a minor in special education. *Methods and Materials: Pre-Kindergarten* is a course typically taken by students majoring in early childhood education Students in the *Collaborative Relationships: Home, School, and Community* are enrolled in the special education program.

Procedures

Although these courses were taught by three different instructors, the blended courses were taught the same for this study for the purpose of equivalency. The instructors collaboratively designed the courses to decide on media elements (i.e., technology) and to select instructional methods that were viable for both online and face-to-face lessons (see Table 1). The weeks classes were held face-to-face in a classroom on campus, instructors used the following technologies: computer, projector, document camera, and DVD player. Methods of demonstration, guided practice, simulation, and lecture were also used when students and instructors met face-to-face. To deliver the online lessons, Blackboard® was utilized, which is a web-based course management system purchased by the university. Within this system, instructors used the following features: announcement board, discussion board, blogs, and wikis. To disseminate content, instructors used written lectures, digitized video, and video recordings. The video recordings were done using Adobe Connect®, which is an online communication system that provides tools for Web conferencing, online classes, and multimedia presentations. Instructors used this system to record themselves lecturing on a topic, demonstrating a skill, and explaining the answers to a guided practice activity.

Table 1.
Course Design

Online Lessons			Face-to-Face Lessons		
Environment	Methods	Media	Environment	Methods	Media
Blackboard® Adobe Connect®	demonstration; simulation; lecture; discussion; guided practice; independent practice	announcement board, discussion board, blogs, wikis, voice recording	classroom on campus	demonstration; simulation; lecture; discussion; guided practice; independent practice	computer; projector; document camera; DVD player

Classes were held face-to-face during the first week of instruction. At this time instructors reviewed the syllabus while highlighting the course schedule. They also presented the Blackboard® site and explained how it would be utilized specific to the course. Because Blackboard® was used university-wide, all students had previous experience with this system. One-on-one technology support was also available to students throughout the entire semester from the center.

The format for the online lessons was the same in all three courses. Each lesson was comprised of five components: lesson announcement, lesson information, lesson assignment, required reading, and lesson blog (see Figure 1). The lesson announcement was recorded using a voice recording in Blackboard® that provided an overview of the lesson. Next, students moved on to the lesson information folder, which contained topical information specific to that lesson. Students then progressed to the lesson assignment folder to complete an independent practice activity worth points. The required reading portion of the lesson informed students about what they were to have read prior to attending the face-to-face lesson the following week. Lastly, the lesson blog provided students with a stage for asking questions and sharing supplemental information about the lesson's topic. Instructors checked this blog daily. The face-to-face lessons followed this same organizational flow. However, each of these lessons began with a question-answer session relative the preceding lesson completed online.

Instrumentation

The U.S. Department of Education's (2009) *Evaluation of Evidence-Based Practices in Online Learning: A Meta-Analysis and Review of Online Learning Studies* served as the conceptual framework for this study. Twenty-eight studies in this meta-analysis pertained to comparing purely online to face-to-face instruction (U.S. DOE, 2009, pp. 21-23). The findings from these 28 studies were open coded, by the first two authors, for common variables that influence effectiveness of the course, which according to Creswell (1998) is called categorical aggregation. Next, codes were analyzed by using a pattern coding method to identify categories from relationships amongst them. Through constant comparison and reconceptualization, six categories were identified: student learning, course

Figure 1. Example of an online lesson format presented on Blackboard®.

objectives, instructor involvement, media element, learning experience, and advantages.

A peer audit for inter-rater reliability was conducted by a research assistant not connected to this study. An analytic schema was presented to the assistant that detailed how findings from the studies were coded. The research assistant conducted a subsequent analysis by collapsing inter-related codes into the six predetermined categories. Agreement was achieved when the assistant and authors recorded identical codes within the six categories. Inter-rater agreement was calculated by dividing the number of agreements by the number of agreements plus disagreements. A reliability of 83% was achieved. In cases of disagreement, the research assistant and two authors discussed their reasoning and came to consensus.

A 10-item survey was developed central to these categories (see Table 2). Students rated items using a Likert scale denoted as 5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, 1 = Strongly Disagree. Because one of the research questions was to compare the effectiveness of online learning with that to face-to-face, two items per category (i.e., student learning, course objectives, instructor involvement, media elements) were included for a comparative analysis relative to face-to-face and online lessons. Another research question guiding this study was to ascertain if blended instruction had an advantage over purely face-to-face instruction and online instruction.

Table 2.
Survey Items and Corresponding Categories

Item	Category
1. I was able to learn the course content when lessons were face-to-face.	Student Learning
2. I was able to learn the course content when lessons were online.	Student Learning
3. The face-to-face lessons were effective at meeting the course objectives.	Course Objectives
4. The online lessons were effective at meeting the course objectives.	Course Objectives
5. My instructor was highly involved in my face-to-face lessons.	Instructor Involvement
6. My instructor was highly involved in my online lessons.	Instructor Involvement
7. The technology/media used in my face-to-face lessons effectively supported my learning	Media Elements
8. The technology/media used in my online lessons effectively supported my learning.	Media Elements
9. My learning experience was **enhanced** with a blend of face-to-face and online lessons.	Learning Experience
10. **Comparatively**, this blended course had more advantages to my learning than if it was offered only face-to-face or only online.	Advantages

The 10-item survey was field-tested the semester prior in the *assessment and program planning* course with a student enrollment of 24. The instrument was found to be internally consistent with Cronbach's Coefficient Alpha at .94 and with the item-to-overall correlations being all positive.

Data Collection and Analysis

A quantitative research design was implemented for this study. Participants anonymously completed the 10-item survey at the end of the semester during the last week of instruction (i.e., 16th week). The survey was uploaded into the Blackboard®, which is a web-based course management system. The survey took approximately 10 minutes to complete, with the overall response rate at 95%, which is well above the acceptable rate of 50% (Babbie, 1990).

Data were collected across one semester. One application of data was

obtained for each of the three courses (i.e., assessment, methods, collaboration).

Data were analyzed using descriptive statistics. Data from the three courses were aggregated by survey item with means and standard deviations reported. In addition, items were aggregated by categories that influence effectiveness and were analyzed using composite scores to determine the overall effectiveness of the blended courses. Data were also disaggregated by course with mean scores reported.

Results

Is blending online and face-to-face instruction an effective delivery method? More specifically, are online and face-to-face lessons equally effective in a blended course? Does blended instruction have an advantage over purely face-to-face instruction and online instruction? These research questions were addressed using a survey to measure students' perceptions on the effectiveness of blended instruction, which merged online and face-to-face delivery methods. The results obtained from the survey administered to 36 students enrolled in teacher education programs (i.e., special education, early childhood education, elementary education) are represented in Table 3. Results of data collected from students enrolled in the three courses (i.e., assessment, methods, collaboration) are aggregated by the 10-items comprising the survey. The mean and standard deviation are reported for students' ratings of each item, as are composite scores for four categories that influence effectiveness: student learning, course objectives, instructor involvement, and media elements.

According to results, *student learning* was achieved using blended instruction (C = 4.53). Students' perceptions were that they were able to learn the course content when lessons were face-to-face (*M* = 4.72). Students were in agreement, although slightly less, that learning was also maintained when lessons were taught online (*M* = 4.33).

Based on data, using a blended approach was effective at meeting *course objectives* (C = 4.56). Survey data revealed that students felt objectives were met during face-to face lessons (*M* = 4.66). Comparatively, students perceived that course objectives were also met during online lessons (*M* = 4.44).

Students agreed that *instructor involvement* was high throughout the blended courses (C = 4.63). They agreed the instructors were involved during face-to-face sessions (*M* = 4.72), with continued involvement when the sessions were online (*M* = 4.58).

Media elements effectively supported student learning in the blended courses (C = 4.51). Perceptions were that the media/technology supplementing face-to-face lessons were effective (*M* = 4.53). Interestingly, students also perceived effectiveness for online lessons, which had increased usage of media/technology.

Overall, students felt their *learning experience* was enhanced with a blend of face-to-face and online lessons (*M* = 4.52). Comparatively, students perceived blended instruction to have an *advantage* over courses taught using only face-to-face or online elements because a blended approach merged the two (*M* = 4.55).

When comparing item means between face-to-face and online within each category, the means for the face-to-face lessons were slightly higher than the online lessons across all categories. Nonetheless, the range of means was 4.33 to 4.72, which revealed that

Table 3

Aggregated Survey Data

Item	Mean (*M*)	Standard Deviation (*SD*)	Composite Score (C)
1. I was able to learn the course content when lessons were face-to-face.	4.72	.51	4.53 Student Learning
2. I was able to learn the course content when lessons were online.	4.33	.68	
3. The face-to-face lessons were effective at meeting the course objectives.	4.66	.53	4.56 Course Objectives
4. The online lessons were effective at meeting the course objectives.	4.44	.65	
5. My instructor was highly involved in my face-to-face lessons.	4.72	.74	4.63 Instructor Involvement
6. My instructor was highly involved in my online lessons.	4.58	.60	
7. The technology/media used in my face-to-face lessons effectively supported my learning.	4.53	.56	4.51 Media Elements
8. The technology/media used in my online lessons effectively supported my learning.	4.44	.73	
9. My learning experience was **enhanced** with a blend of face-to-face and online lessons.	4.52	.74	
10. **Comparatively**, this blended course had more advantages to my learning than if it was offered only face-to-face or only online.	4.55	.84	

online learning compares to that of face-to-face instruction and supported by composite scores, the blended courses as a whole were effective. Beyond this, results suggested that supplementing face-to-face instruction with online instruction enhanced learning.

When disaggregating data by course (see Table 4), there was agreement amongst students that the blended courses produced positive outcomes. Mean scores ranged from 4.25 to 4.96. As mentioned above, these three courses represented three teacher education programs: special education, early childhood education, and elementary education. As a result, there was agreement amongst students enrolled in these separate programs that their learning experience was enhanced due to a blended approach further, they perceived the blended course to have had learning advantages.

Discussion

According to Ayala (2009), blended learning is "the purposeful integration of traditional (i.e., face-to-face) and online learning in order to provide educational opportunities that maximize the benefits of each platform and thus more effectively facilitate student learning" (p. 277). Few studies have addressed the students' perceptions while taking a course that uses a blended approach. The results of this study suggested that students' perceptions of taking blended courses were favorable in the areas of student learning, course objectives, instructor involvement and media element.

Student Learning

The integration of the online format with the face-to-face traditional format may provide students with varied learning opportunities that meet their personal needs. Thorne (2003) suggested that blended learning is a way of meeting the challenges of tailoring learning and development to the needs of the individuals by integrating the innovative and technological advances offered by online learning with the interaction and participation offered in the best of traditional learning. Researchers have reported that students who are enrolled in blended learning courses demonstrate the same or better learning outcomes when compared to traditional, face-to-face courses (Chen & Jones, 2007; Melton, Graf, & Chopak-Foss, 2009).

Table 4

Course Objectives

Students perceived that course objectives were met in face-to-face lessons as well as in the online lessons. Since this was the first blended course that the students had taken in their academic career, it was critical that students had a clear understanding of the alternating lesson format that was used throughout the course. During the first class session of each course, instructors oriented the students to the Blackboard® site and described in detail how the online lessons were to be completed. A well-organized course and clear expectations are critical components in completing the online learning activities and assignments. In order for students to have valuable learning experiences there needs to be a transparent and direct link between the course objectives and the learning activities.

Instructor Involvement

Instructor involvement or engagement in an online course is pivotal to the learning environment. Mandernach, Gonzales, and Garrett (2006) suggested that instructors who are engaged in the online learning environment do so by setting a tone and climate within their courses. It is also suggested that instructors who teach online manage three roles: cognitive, affective, and

Disaggregated Survey Data

Item	Methods Course (M) n=10	Assessment course (M) n=14	Collaboration Course (M) n=12
1. I was able to learn the course content when lessons were face-to-face.	4.75	4.68	4.83
2. I was able to learn the course content when lessons were online.	4.25	4.32	4.50
3. The face-to-face lessons were effective at meeting the course objectives.	4.75	4.55	4.92
4. The online lessons were effective at meeting the course objectives.	4.38	4.36	4.83
5. My instructor was highly involved in my face-to-face lessons.	4.63	4.68	4.82
6. My instructor was highly involved in my online lessons.	4.13	4.64	4.96
7. The technology/media used in my face-to-face lessons effectively supported my learning.	4.38	4.45	4.87
8. The technology/media used in my online lessons effectively supported my learning.	4.25	4.36	4.72
9. My learning experience was **enhanced** with a blend of face-to-face and online lessons.	4.75	4.32	4.78
10. **Comparatively**, this blended course had more advantages to my learning than if it was offered only face-to-face or only online.	4.50	4.45	4.72

managerial (Coppola, Hiltz, & Rotter, 2002). The cognitive role refers to the learning of content and constructing knowledge. The affective role involves the social aspect of the course that promotes interactions between instructor and student, student and student, and student and content. The managerial role entails the logistics of the course (e.g., course organization and management).

Students in this study perceived that the instructors were actively involved during face-to-face lessons with continued involvement when the lessons were online. It is understandable for students to perceive that instructors were involved in instruction when they were engaged in the face-to-face aspects of the course because of the physical presence but it was encouraging that they also perceived instructors to be highly involved in the online aspects of the course.

Media Element

Students in this study perceived the media elements used in the face-to-face and online aspects of the course as effective. Even though the technology skills of the students were not assessed prior to the beginning of the course, it was assumed that each student had a basic technology skill level and had access to the required technology. There may be additional factors that attributed to the positive student response regarding media element. First, each instructor had a minimum of three years of experience teaching other courses using a purely online format. Second, each instructor participated in numerous online teaching training opportunities that covered the following topics: gradebook, organizing an online course, effectively using blogs and discussion boards, using adobe connect, wikis and voice recordings. Based on the previous online teaching and participation in trainings about online delivery of course, all instructors involved in this study had a mid to high level of comfort and confidence in using the technology and media aspects of the blended course that they taught.

Research suggested that prior knowledge and usage of technology are linked to an individual's overall attitude about technology (Gefen, Karahanna, & Straub, 2003; Martins & Kellermanns, 2004). Another factor that could have attributed to the students' positive perception of the media elements used in the face-to-face and online aspects of the course is that they had easy access to technology support 16 hours a day, 6 days a week throughout the semester by simply clicking on the HELP button located on the course site.

Learning Experience and Advantages

Data analysis revealed that students were satisfied with the overall learning experience in their blended courses. Beyond this, they perceived the blended instructional format to have an *advantage* over their previous courses that were taught using only face-to-face or online elements. Even though the survey used in this study did not provide open ended questions for students to answer in regard to why they were satisfied or unsatisfied and what were the perceived advantages or disadvantages with the blended courses, research has suggested that content availability 24-7, flexibility of time to complete lessons, usability of the course management website and interactive lessons attributed to overall satisfaction (Delialioglu & Yildirim, 2007).

Educational Implications

Blended learning is a course delivery method that has the potential to integrate traditional face-to-face instruction with online instruction. According to the Centre for Educational Research and Innovation (CERI, 2005), blended learning courses are becoming increasingly significant to

complement, not replace traditional forms of teaching (Mitchell & Forer, 2010). When done purposefully and thoughtfully, blended learning can enhance the overall learning experience of students.

The findings have the potential to influence faculty's views of the effectiveness of online learning components for both undergraduate and graduate students. As faculty within the university deliberate over redesigning face-to-face courses to an online delivery, they should be encouraged to consider using blended instruction. The social importance of this decision is that it is data-based both nationally and locally. The study is triangulated with the DOE's meta-analysis, which is at the national level; whereas, this study represents local students. As a result, faculty may be more willing to internalize and apply the findings because they engender the perceptions/voices of students within this university.

For faculty who are interested in teaching a blended course, they need to think about the possible ramifications of the decision and the commitment on their time. Faculty concerns related to online teaching include recognition and compensation, course load, promotion and tenure, faculty day-to-day workload, class size, technology, course development, and pedagogical support. A discussion with administration to gain support will help faculty be more successful at online course creation and instruction.

Limitations

One limitation of this study was that this was the first blended course taken by all participants involved which could impact the understanding and participation in the online component of the courses studied. Another limitation was that the survey did not provide an opportunity for participants to give specific examples of their perceptions about the specific components under each category (i.e., student learning, effectiveness, instructor involvement, and media elements) in the survey. If an open-ended question was included in the survey for each category, data could have been analyzed to determine what components (e.g., lessons, assessments, technology) of the blended courses specifically attributed to their overall experience.

Recommendations for Future Research

Future research could focus more specifically on four of the categories from our survey (i.e., student learning, effectiveness/course objectives, instructor involvement or media elements). An understanding of learning styles is fundamental to how faculty approach teaching. A study that identifies individual learning styles and how a blended learning environment can meet the individual student learning needs could provide insight into how faculty can integrate online lessons into face-to-face courses.

Another study could address the components of an online or blended course that provides students with the tools needed to meet the course objectives. Course components could include an analysis of course syllabus, ease of course navigation, organizational components and alignment of class activities and assessment procedures used to determine if students have met the course objectives.

Additional research could address student perception of instructor involvement and being part of a community of learners in a blended course. Future studies could address the relationships between the student-teacher, student-student. and student-content.

There are numerous media technology tools that are used in higher education courses, mainly for online and blended. For the novice student, this can be

overwhelming. Future research could identify how faculty support students who have varying degrees of technology skills and available tools (e.g., synchronous chats, asynchronous discussions, simulations, podcasts, audio taped lectures) to provide the most benefit for student learning.

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