US-China Education Review A, ISSN 2161-623X
May 2013, Vol. 3, No. 5, 320-324

The Case for Blended Instruction: Is It a Proven Better Way to Teach?

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This study of empirical research investigates four specific questions on blended instruction: Is there compatibility of blended instruction with accepted learning constructs? Should there be any consideration of program audience that are better suited for this teaching method? and Is there evidence on the effectiveness of the pedagogy of blended learning itself and finally how are planned learning outcomes affected by this instructional method? In reviewing the empirical studies of others, it was found that the use of blended instruction is in fact very compatible with most of our commonly accepted practices of learning theory. In examining the factor of the audience in terms of successful learning results, there are noticeable differences that materialize, such as a generational demograph, the component of a student's intuitive learning quotient, and the pre-existing attitudes of the student on blended instruction. As far as the overall effectiveness of the pedagogy goes, it was found that this teaching method will lead to higher-level and higher-order thinking skills, a deeper appreciation of an academic community and an increase in self-regulated skills, such as time management. Finally, there is some evidence that suggests that in blended instruction, the use of concrete-sequential learning modules, the integration of greater visual imagery, and access to customized time allotment, there will be a positive impact on overall student outcomes. In summation, we can infer that when an instructor takes the effort and integrates well-constructed blended teaching principles aligned with individual students' needs, the final course outcomes will be just as or even more effective for most students compared to a direct face-to-face class environment.

Keywords: blended learning, online learning, blended instructional practices and online student audiences

Purpose and Direction of the Study

Through a review of existing research on the topic, this study examines the relative merits of using blended learning as a viable approach to instruction. In order to arrive at a summative recommendation, four formative research questions are asked initially: (1) Is the basic design used in the blended learning process compatible with accepted principles of the learning process? (2) Does the success in blended learning methods vary based on the type of the potential audience member? (3) Does the use of blended learning impact the quality of collective learning outcomes? and (4) Does the delivery of instruction in a blended modality enrich pedagogical practice?

This study investigates four specific elements of blended instruction: compatibility with accepted learning constructs, a consideration of the student audience best suited for this teaching method, an analysis of the effectiveness of the pedagogy itself, and how planned learning outcomes are directly influenced by the process.

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After reviewing the data on these four determinative research questions, a clearer image on the intrinsic value of using a blended instructional technique will be discerned. Seminal perspectives will follow from the results observed in the research.

The Rationale for Blended Instruction Based on Learning Principles

The first empirical question studied is to determine if there is a foundation for using blended learning that can be related to how we acquire knowledge. The constructivist pedagogy proposes that learning occurs when the student has greater control of the mental activity at hand and can shape his/her conceptualization with concrete hands-on lessons. It would be appropriate to investigate if blended offerings veer closer to applying knowledge than merely forming abstract impressions.

The study of how we learn is an essential ingredient of all pedagogical approaches. If we can connect what we currently know about learning with the way we instruct, our chances for success are greatly enhanced. In reviewing brain research data, the integration of applied technology with cognitive science indicates learning will not only improve, it will retain learning for increasing longer intervals (Bransford, Brown, & Cocking, 2000). A heavy degree of consistent visual stimulation links well with the way in which our memory system functions.

Creating a sense of academic community is a standard accepted as the way that educators acquire knowledge on instructional practice. In a study of 200 graduate education students, it was determined that the benefits of combined face-to-face instruction with online learning, affect increased learning outcomes, lower attrition rates, and above all produce a sense of academic community among the majority of students and staff (Dziuban, Hartman, & Moskal, 2004). Similarly, a comprehensive analysis of building community inquiry, data suggest that an instructional model, such as blended that encompasses teaching presence, social presence, and cognitive presence is a superior way to deliver instruction (Garrison & Anderson, 2003).

An important consideration of how we learn is natural inquisitiveness. We most often want to learn more dramatically and rapidly about the things that gain our immediate attention and inspire our curiosity. In a pilot study of undergraduate students at Rochester Institute of Technology, a significant number of participants believed that the type of instruction used in blended learning offers course content which was designed to stimulate enthusiasm and instill interest (Humbert & Vignare, 2005). A learning taxonomy is a progressive perspective on the depth and intensity of how much we learn. In a cross-disciplinary study of collegiate programs, it was concluded that the profundity of insight found in participants' responses was consistently higher in a blended setting in comparison to a traditional class, allowing for more creative and interactive classwork (King, 2002).

Understanding and working with individual learning styles requiring customized instruction are an advocated principle of learning espoused by Danielson (2009). Differentiation of instruction and developing a scaffolding plan to meet students' needs is now common practice. In a study of a core biology class, the students offered their opinion that a wider range of students' learning styles were touched corresponding with multiple sources of blended strategies, such as visual, cognitive, social, and reflective practices (King & Hildreth, 2001). Another study that compared two sets of students in both a traditional and a blended setting, concluded that marketing students felt the blended course helped them develop their skills in critical thinking, team building, and social interaction to a much higher degree (Priluck, 2004).

One of the basic tenets in adult learning declares that the learning increases when immediate application to

practice becomes evident (Knowles, 2008). In a longitudinal study conducted at SUNY (State University of New York), the effectiveness of blended instruction was seen as being in direct and proportionate correlation to being a better practitioner, as well as increasing general satisfaction of knowing how different students learn (Shea, Pickett, & Pelz, 2003). The blended students felt, overall teacher presence was boosted in the blended learning environment where they viewed the content as being taught in a concrete and pragmatic manner.

Studying the Audience of the Blended Learner

The second research question is to probe whether or not blended instruction is equally suited for all students. Are there specific populations for which blended learning in not appropriate or recommended? As frequently done in education, we wonder if one size fits all.

Given the rapid growth of various technological platforms over the past three decades, it would seem intuitive that generational markers would correlate well with the reception of blended learning practices. Looking through the lens of the generational markers, we might assume that interest and appreciation of blended learning techniques would be higher with the younger generations and less popular with an older generation set. However, if we study the generational markers suggested by Dziuban, Moskal, and Hartman, we can identify descending generations as Matures, Baby Boomers, Generation X, and Millennials as being better suited to blended practices (Dziuban, Hartman, & Moskal, 2006). A counter-intuitive result was found whereby Millennials responded the least positively to blended instructional practices, while the Matures and the Baby Boomers were more significantly attracted to its use.

Another way to differentiate the audience is to divide groups by cognitive difference styles. The researcher found students who were typically disposed to intuitive cognitive styles demonstrated a much smaller sense of classroom community and were wary of blended educational practice (Graff, 2003). This suggests that students disposed to intuitive thinking operate in more of an individual context without the impetus of group consensus or input.

In examining another psychological characteristic, it is interesting to see if there is a relationship between self-regulation and the ability to perform well in a blended setting. It seems reasonable to assume that individuals with a higher quotient of skills in self-regulation would perform at higher levels in this format. Although self-regulation as a unique characteristic was not a highly correlated feature by itself, it was revealed that higher levels of verbal ability and the concept of self-efficacy were very significant in predicting a students' success in a blended classroom (Lynch & Dembo, 2005). Those students who were confident in their abilities to work with blended techniques were often the most successful in the class.

Attitudes and preconceptions of ease of use play a major role in a person's penchant for seeking blended learning as a medium. Students' attitude towards the favorability of the instructional method correlated highly to select and use of blended instruction, while it plays very little part in determining how the individual would fare in the course (Pan, Sivo, & Brophy, 2003).

Impact of Blended Learning on the Quality of Learning Outcomes

The next issue that we scrutinize is the connection between the use of blended learning and its ability to produce superior results in relationship to other instructional methods. If we are not convinced that this specific method has substantive advantages, why would we not want to employ it?

Research suggests that both threaded and face-to-face discussions will lead to successful outcomes. Certain students have a preference for the direct face-to-face communication style, while others are more

comfortable with the anonymity that an online dialogue can provide. Through the application of a coded analysis of cognitive processing categories, evidence was found that higher-order thinking occurs in greater frequency with online discussion applications (Meyer, 2003).

In comparing final students' achievement levels using three distinct modalities of instruction, the instructional technique that incorporated components of both direct instruction with online assignments, proved to be significantly higher in obtaining results than merely using a Web-based environment or just using the lecture only instructional model (O'Toole & Absalom, 2003). Students using the blended modality expressed greater confidence with grasping the content and were more satisfied with the use of visual imagery which online-instruction can offer.

Looking at students' satisfaction and perception of the depth of learning attained, the blended modality has proven to be significantly better than the lecture method. Those students taking an environmental science biology course assigned to the blended format indicated a higher level of student-instructor interaction and a richer sense of learning satisfaction was reached in the hybrid course than those students participating in a traditional lecture class (Riffell & Sibley, 2003). Students also felt that time-management skills were heightened with this instructional approach.

Understanding How Preparing in a Blended Modality Affects Learning

If blended instructional efforts are fruitful in realizing effective student learning, what are the specific elements within this method that tends to make it effective? Our inquiry into the overall effectiveness of blended learning takes us to the path of cause and effect.

In the design of instructional blended materials, the instructor makes conscious decisions on the extent of group dynamics, the structure of assigned discussions, and the overall autonomy given to students. When group dynamics are intensified with significant anticipated group interaction, it meets the psychological need of the concrete-sequential learner (Lynch & Dembo, 2005), which leads to increases in learning (Cox, Carr, & Hall, 2006). When student engagement with projects is less structured and is more random in nature, blended learning tends to be on an equal basis to traditional teaching in terms of achievement level of learning.

The augmentation of visual images embedded into the materials assures higher levels of learning will occur for those participants with a related visual learning style (Reasons, Valadares, & Slavkin, 2005). The ease of working on asynchronous projects on a schedule that is internally geared to a learner's cognitive level of available focus of time, leads to documentable increased levels of achievement (Rheingold, 2002).

Summary Review of the Data

Based on available research into the efficacy of a blended learning approach to instruction, we can deduce several conclusions. Firstly, many of the known paradigms that we now accept on how we learn are compatible with blended instructional practices; and Secondly, blended learning is not equally successful for all students. There are small but identifiable student population groups that are less suited than others in using this teaching method.

In general, student outcomes are never lowered and usually raised with a well-planned blended teaching modality as compared to traditional teaching. Some of the concrete applications used in blended learning, such as a threaded discussion, use of enhanced imagery, and the influence of group dynamics, all contribute to an enhanced student outcome.

In summation, we can infer that when an instructor takes the effort and integrates well-constructed blended teaching principles aligned with individual students' needs, the final course outcomes will be just as or even more effective for most students compared to a direct face-to-face class environment.

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