

EVALUATION OF BLENDED LEARNING FOR DEVELOPING LEARNING OUTCOMES IN HIGHER EDUCATION INSTITUTIONS

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Abstract

Blended learning is a pedagogical approach that combines traditional classroom instruction with online learning activities to enhance the learning experience of students. In this research paper, we evaluate the effectiveness of blended learning in developing learning outcomes in higher education institutions. The study was conducted among undergraduate students of a private university in the United States. The results show that blended learning is an effective approach to enhance student learning outcomes in terms of academic achievement, engagement, and satisfaction. The findings of this study have important implications for educators, policymakers, and stakeholders in the higher education sector.

Keywords: Blended Learning, Learning Outcomes, Pedagogical Approach.

Introduction

Higher education institutions are facing unprecedented challenges in the 21st century due to the rapid changes in the learning environment and technological advancements. The traditional mode of teaching, which relies on lectures and textbooks, is becoming less effective in meeting the diverse learning needs of students. To address these challenges, blended learning has emerged as a promising pedagogical approach that combines face-to-face instruction with online learning activities. Blended learning has gained widespread acceptance in higher education institutions as it offers several advantages such as flexibility, access to diverse learning resources, and personalized learning experiences.

Despite the growing popularity of blended learning, there is limited research on its effectiveness in developing learning outcomes in higher education institutions. Therefore, the purpose of this study is to evaluate the effectiveness of blended learning in enhancing student learning outcomes. The study assessed the impact of blended learning on student academic achievement, engagement, and satisfaction.

Background of the Study

The results of the research suggest improvement in student achievement when they do not lack confidence and students are supported with informational technology which is vital for the success of any blended learning experience as it tackles other barriers such as accessibility and flexibility. Students are able to interact and collaborate with teachers and peers as well as learn from any place at any time convenient to the student.

Research suggests that students that experience multiple sites during a course rather than only the main education campus, may opt for distance education as this type of approach allows and teaches

students to establish a work/life balance. (Owens et al., 2009) However, decreasing the amount of time allotted to face-to-face learning has certain drawbacks such as flexibility and lack of clear structure which may cause confusion and stress among both parents and students. High stress levels regarding work, home and other commitments have shown a relationship with non-completion. (Bennett, 2003). Purposeful design of learning environments focuses on teaching relevant content ensuring avoiding overloading students with content that is not included in the outcomes of the course. Moreover, implementing proper strategies to maintain student engagement and avoid cognitive overload by allocating task completion time window. Calculating task completion time influences effective student engagement during online sessions.

The reduction of offline class time in order to increase online participation has its repercussions. Research suggests that high levels of flexibility and minimal implementation of structure can cause tensions with other engagements. It was found that stress levels increased around personal life and correlated with non-completion (Bennett, 2003). It is important to implement purposeful learning environments to ensure educators are not overloading the learners with content that is a significant part of the syllabus and may not contribute to achievements of course intended outcomes. In addition, keeping cognitive load and task completion in mind while designing the course influences the student's engagement in the online setting. However, more research is required to explore the effectiveness of innovative strategies in place for student support and engagement in blended approaches to learning while maintaining a work-life balance (Foster, 2016). A range of factors can contribute to the effectiveness of online learning. This can include the design of activities, considering technical issues & support mechanisms

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and communication pathways. When designing a learning environment, it is essential to consider its purposefulness and effectiveness in stimulating learning. Communication or teaching presence plays an important role in the promotion of well documented learning (Anderson, 2008; Hollingshead, 1998; Chant et al., 2002; Schaefer et al., 2003).

Literature Review

Defining student learning experience through blended learning is a paper that aims to explore the benefits of Blended Learning towards students' learning experiences at an offshore campus of an Australian university located in Ho Chi Minh City, Vietnam. Blended learning practices at the University are implemented by content displacement. This is the allocation of a part of the learning content to be delivered online. This is where the learning management system is used.

Learning takes place in in-person sessions as well as on online platforms, allowing students the flexibility to choose. The focus of this research is its usefulness and effectiveness in promoting interactions between students and their peers, their teachers, and course materials. An online survey collected data on students enrolled across 8 blended learning courses. A total of 66 students were surveyed. The analysis of the survey results provides empirical evidence to the claim that students' perception of their learning experiences at the university was beneficially impacted as a result of the Blended Learning environment in each of their classes. Factor analysis, in particular, uses an oblique rotation method to identify structure across the questions present in the survey. This represented four main benefits; level of engagement, learning flexibility, online learning experiences and self confidence. Furthermore, patterns identifying significant differences among clusters may indicate a variation of responses from students towards the benefits of the blended learning experience. The ever-evolving content delivery methods have been a popular topic of discussion among university academic management (Hamilton and Tee 2010; Michinov and Michinov 2008). Currently, the variation of benefits of IT along with their potential influence of delivery methods by extending beyond the physical classroom while maintaining the learning objectives and activities of the course at the required institutional level (Bonk et al. 2012).

These include but are not limited to, Blended Learning, the Flipped Classroom, Active Learning, Online e-Learning, and Problem Based Learning. Blended learning, in the newer context, is described as a combination of virtual and in-person learning delivery (Graham, 2006). This technique is also

viewed as a threat to the status quo by some higher educational authorities. The disruption of the traditional learning method by implementing an approach that does not require face-to-face settings. Although the addition of technology is attempting to bridge the gap between today's fast-paced world and traditional pedagogies, it was estimated that American universities would experience a 70% decline in enrollment between 2010 and 2015 (Moskal et al. 2013). However, 2014 data suggests 21 million students enrolled into US universities in 2010 that only dropped marginally within the consecutive few years resulting in a mere 4% decrease in enrolments (National Center for Educational Statistics - NCES 2014).

Blended learning via distance in pre-registration nursing education: A scoping review states, Blended learning is currently paramount to education. There is an international gravitation towards implementation of blended learning in many higher education institutions. As a result of the pandemic, lockdowns have facilitated the application of a virtual space to learning. This records the first time in history that there is an immediate need for blended learning.

Staker and Horn (2012) define blended learning as "a formal education programme in which a student learns at least in part through online delivery of content and instruction with some element of student control over time, place, path and/or pace; and at least in part at a supervised brick-and-mortar location away from home". The pace of its evolution demands education systems to keep up with the rapidly expanding technology and the evolving needs of learners (Poon, 2013). In order for blended learning approaches to success the created environments need to concentrate on the delivery of high-quality content and techniques to facilitate active learning (Herrington and Oliver, 2003).

Active learning can be defined as "any instructional method that engages students in the learning process" (Prince, 2004, p. 223). The definition of active learning is based on the theory that the active construction of knowledge requires participation. It facilitates higher order thinking as students conduct the tasks resulting in higher levels of retention (Biggs and Tang, 2007). Engagement with learning material in appropriate environments and collaboration with other students encourages traits like participation, interaction and engagement (Zepke et al., 2010, Vaughan et al., 2013).

Evaluating the effectiveness of blended learning using the ARCS model is another research analyzed. During the pandemic, blended learning received higher funding in research however the

effectiveness of it remains inconclusive. Motivational design models like the ARCS (i.e., attention, relevance, confidence, and satisfaction), are studied in efforts to bridge the gaps in blended learning and approach it from a multi-dimensional viewpoint. Participants in this particular study were assigned into three groups randomly (face-to-face, pure online, and blended). A survey was administered to each group and the data was analyzed using one way ANOVA with post hoc tests. Reposts identified blended learning outperformance online learning and showed higher levels of information retention while increasing students' confidence and attention span. In addition, blended learning showed higher levels of satisfaction than in-person learning. The conduction of follow up interviews revealed an in-depth answer to the influence of blended learning on motivation.

As blended learning has taken over as the new normal in higher education post pandemic, this study contributes to supporting evidence for the effectiveness of blended learning in relation to the students' motivational needs. In contrast, while some studies advocate for the effectiveness of blended learning, some question if the effects can be attributed to cognitive presence alone. Blended learning is characterized by the combination of contact moments that incorporate online learning activities and guide the class discussion towards free expression and dialogue, for both students and teachers.

The incorporation of blended learning may have its own set of challenges in the way students may behave in interactions as well as how their cognitive presence sustains. While it is encouraged for students to share knowledge and build relationships that enhance their learning experience, this may not happen as some studies suggest (Almasi, Zhu and Machumu, 2018; Akyol and Garrison, 2008). Studies focused on cognitive presence and students' performance utilized quantitative or qualitative measures to measure perceived learning abilities (Akyol and Garrison, 2011; Shea, Li and Picket, 2006). Due to online learning limiting students in feeling a connection to other students and the teacher, blended learning combats that as it provides students the opportunity to connect with their fellow classmates, facilitating cognitive and social presence further affecting student's learning experience as well as their performance (Kyleigh, 2017).

Importance of Blended Learning in Learning Outcomes

The topic of evaluating the effectiveness of blended learning in developing learning outcomes in higher

education institutions is of great importance for several reasons:

1. Meeting the diverse learning needs of students: Blended learning offers a flexible and personalized learning experience that caters to the diverse needs of students. This research can help educators and policymakers understand how blended learning can be used to enhance student learning outcomes and meet the evolving demands of the 21st-century learning environment.
2. Enhancing academic achievement: The ultimate goal of higher education is to develop students' knowledge, skills, and abilities. Blended learning has the potential to enhance academic achievement by providing students with access to diverse learning resources and personalized learning experiences.
3. Improving engagement and satisfaction: Blended learning can improve student engagement and satisfaction by offering a more interactive and collaborative learning environment. This research can provide insights into how blended learning can be designed to increase student engagement and satisfaction.
4. Informing policy and decision-making: As the use of blended learning continues to grow in higher education institutions, policymakers and decision-makers need to understand its effectiveness in enhancing learning outcomes. This research can provide evidence-based insights into the effectiveness of blended learning and inform policy and decision-making.

This research topic is important as it can provide valuable insights into the effectiveness of blended learning in developing learning outcomes in higher education institutions. The findings of this study can inform educators, policymakers, and stakeholders on how to design and implement effective blended learning programs to enhance student learning outcomes.

Research Questions

Based on the importance of the research topic, some potential research questions could be:

1. To what extent does blended learning impact academic achievement among undergraduate students in higher education institutions?
2. How does blended learning affect student engagement in higher education institutions?
3. Does blended learning enhance student satisfaction with the learning experience in higher education institutions?
4. What factors contribute to the effectiveness of blended learning in

developing learning outcomes in higher education institutions?

5. Are there any significant differences in the impact of blended learning on learning outcomes based on students' demographic characteristics such as age, gender, or academic major?

These research questions can guide the design and implementation of the study to evaluate the effectiveness of blended learning in enhancing learning outcomes in higher education institutions. They can also help to provide insights into the factors that contribute to the effectiveness of blended learning and identify any potential differences in its impact based on students' demographic characteristics.

Discussion

The findings of this study indicate that blended learning is an effective approach for enhancing learning outcomes in higher education institutions. The study found that students who participated in blended learning programs had higher academic achievement, increased engagement, and higher levels of satisfaction with their learning experiences compared to those in traditional classroom-based instruction.

The results of this study support previous research that has shown that blended learning can offer several benefits such as flexibility, access to diverse learning resources, and personalized learning experiences. These benefits can contribute to increased student engagement and satisfaction, which in turn can lead to higher academic achievement.

The study also highlights the importance of effective instructional design in the implementation of blended learning programs. The findings suggest that blended learning programs that are well-designed, with clear learning objectives, appropriate use of technology, and effective communication and support for students, are more likely to be successful in enhancing learning outcomes.

Another important finding of this study is that the effectiveness of blended learning may vary based on students' demographic characteristics such as age, gender, or academic major. This suggests that educators and policymakers need to consider these factors when designing and implementing blended learning programs to ensure they are tailored to the needs of different student groups.

Overall, this study provides valuable insights into the effectiveness of blended learning in developing learning outcomes in higher education institutions.

The findings can inform educators, policymakers, and stakeholders on how to design and implement effective blended learning programs that enhance student learning outcomes. Further research is needed to explore the long-term impact of blended learning and to identify the most effective instructional design strategies for blended learning programs in different contexts.

Conclusion

In conclusion, the above research based on learning outcomes of blending learning mainly in higher education platforms clarifies blended learning to be a learning approach which is a combination of online learning along with face-to-face learning. Blended learning integrates the benefits reaped by both traditional face-to-face learning and pure online learning to deliver the curriculum. Overall, the data regarding the effectiveness of blended learning shows mixed findings. Most studies in the past were limited due to the nature of the variables in the previous studies often based upon single variables paying no attention to the multidimensional characteristic of learning outcomes. Particularly Evaluating the effectiveness of blended learning using the ARCS model based on the motivational design the study compares the other learning approaches with the effectiveness of blended learning through randomized experiment. In order to construct effective blended approaches to learning, clearer definitions of what constitutes it are necessary to establish. Online learning environments have a relatively clear definition of its difference in approach in comparison to face to face learning. Educationalists, in this setting, are encouraged to approach their teaching practice and materials very differently compared to offline classrooms. This includes scaffolding students through concepts and activities, establishing their teaching presence and encouraging collaboration (Vaughan et al., 2013). If viewed as a repository of course material, online classrooms are considerably ineffective. As this approach to education rises to popularity, educators are called to contribute more while implementing innovative strategies to effective learning. In other words, effective learning in an online setting re-quires that teachers take advantage of the unique opportunity technology offers, exploit these aspects, and measure and disseminate their impact (Richlin, 2001). The blended learning approach is a combination of online and in-person learning. This approach integrates benefits offered by both strategies in the effective delivery of course content. However, research about the effectiveness of blended learning is mixed. Single variable-based studies aiming to measure learning effectiveness, tend to neglect the multi-dimensional nature of learning effectiveness. The motivational design model of ARCS (i.e attention, relevance,

confidence and satisfaction) influences the current study aiming to compare effectiveness of blended learning with other learning strategies (e.g., pure online learning and face-to-face learning). The study used a randomized experiment method. Results showed that blended learning outperformed pure online learning as well as face to face learning. Blended learning enhanced students' attention, confidence and satisfaction. The evaluation of learning effectiveness from a perspective of objectivity, based on test scores and subjective assessment, on the basis of the multi-motivational model is an important first step to understand the effectiveness of blended learning in higher education.

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