

**THE EFFECTIVENESS OF BLENDED LEARNING ON ACADEMIC  
ACHIEVEMENT AND LEARNING PROCESS OF STUDENTS**

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**Abstract:** This study seeks to assess how effective blended learning is in teaching various subjects. The study explores the impact of blended learning on technological advancement and its compatibility with traditional teaching methods. The article discusses an experiment conducted by Duong Huu Tong in 2013, which compared traditional teaching with a blended approach among students. The findings revealed that the blended learning method was more effective than the traditional approach.

**Keywords:** blended learning, information technology, methodology, e-learning, traditional education,

### **Introduction**

“Blended learning” appears to have been in use since the popular advent of the Internet and the World Wide Web in the late 1990s (Friesen, 2012). The BL concept was first proposed in the late 20 century against the backdrop of growing technological innovation (Keogh et al., 2017). Since 2020, the global spread of various forms and models of blended learning has been accelerated due to the widespread lockdowns caused by the Coronavirus pandemic. Over the past four years, students and teachers have experimented with different blended learning approaches, leading to the incorporation of some of these models into mainstream educational methodologies.

### **Literature review**

Recent innovations and advancements have provided an opportunity to develop a unique, independent and technology-facilitated learning environment delivered via e-learning platforms (Omar, N. and Hashim, H., 2021). With the advancement of technology, students now have access to a vast array of internet resources and online classes. These tools provide opportunities for individual communication during lessons, allowing for more personalized learning experiences. Blended learning is seen as a catalyst to the recent advances in education (Thorne, 2003). Integrating new technologies into education offers the opportunity to explore both the benefits and limitations of these tools. It also facilitates the blending of traditional teaching methods with modern approaches, creating a more collaborative and dynamic learning environment. By incorporating innovative digital platforms, virtual reality simulations, and interactive learning modules, blended learning can offer a more dynamic and engaging educational experience. These technologies can help to personalize learning, provide real-time feedback, and enhance collaboration among

students and teachers. Furthermore, students are increasingly requesting BL courses due to the inability to on-campus attendance (Brown et al., 2018). Blended learning is one of the most modern methods of learning helping in solving the knowledge explosion problem, the growing demand for education and the problem of overcrowded lectures if used in distance learning, expanding the acceptance opportunities in education, being able to train, educate and rehabilitate workers without leaving their jobs and teaching housewives, which contributes to raising the literacy rate and eliminating illiteracy; blended learning increases the learning effectiveness to a large degree, decreases the time environment required for training, decreases the training costs, allows the learner to study at his favorite time and place, allows for live interviews and discussions on the network, provides updated information suiting learners' need, and provides simulations, animations, practical events and exercises and practical applications (Al- Shunnaq and Bani Domi, 2010). Blended learning is a method of teaching that combines traditional education with e-learning, both inside and outside the classroom, to help students achieve specific learning goals. This model combines the advantages of e-learning and the benefits of classroom education; this education is based on the integration between the traditional learning and e-learning (Al-Rimawi, 2016). Moreover, empirical research has demonstrated that blended learning improves learners' active learning strategies, multi-technology learning processes, and learner-centered learning experiences (Feng et al., 2018; Han and Ellis, 2021; Liu, 2021). In the current era of technology, it is essential for all nations, including those with limited resources, to have a solid grasp of technological advancements. Blended learning is a valuable approach that can significantly help students acquire knowledge about these advanced technologies. In the "Handbook of Blended Learning" edited by Bonk and Graham in 2006, three categories of blended learning are outlined: web-enhanced learning, reduced face-time learning, and transforming blends. Web-enhanced learning involves incorporating supplementary online resources and activities into traditional in-person instruction. Reduced face-to-face learning involves reallocating some lecture time to online activities. Transforming blends combine traditional in-person teaching with web-based interactions, allowing students to actively participate in constructing their knowledge. Blended learning is being used widely in both academic and corporate circles (Cho Cho Wai\*, Ernest Lim Kok Seng, 2013). According to Xiaotian Han, 2023, in China, the Ministry of Education has strongly supported educational informatization since 2012 by issuing a number of policies (the Ministry of Education, 2012). In 2016, China issued the Guiding Opinions of the Ministry of Education on Deepening the Educational and Teaching Reform of Colleges and Universities, emphasizing the promotion of the BL model in higher education. In 2017, the Ministry of Education listed BL as one of the trends in driving education reform in the New Media Alliance Horizon Report: 2017 Higher Education

Edition. In 2018, Minister Chen Baosheng of the Ministry of Education proposed at the National Conference on Undergraduate Education in Colleges and Universities in the New Era to focus on promoting classroom revolution and new teaching models such as flipped classroom and BL approach. In 2020, the first batch of national BL courses was identified, which pushed the development of BL to the forefront of teaching reform. During the pandemic era in China, BL was implemented in all universities and colleges. Blending a class video blog into face-to-face instruction could improve language oral proficiency but failed to greatly improve the voluntariness to communication using the target language in China (Liu, 2016). Blended learning can also play a key role in boosting students' willingness to communicate spontaneously in the target language. By incorporating online platforms and resources into the classroom, students can engage in interactive activities, virtual discussions, and collaborative projects that encourage them to use the language in authentic contexts. Additionally, blended learning allows for personalized learning experiences, enabling students to practice speaking skills at their own pace and receive immediate feedback from both peers and instructors. Overall, by combining traditional face-to-face lessons with online components, educators can create a dynamic and supportive environment that motivates students to communicate actively in the target language. Blended learning could effectively facilitate communication skills and improve learning outcomes of nursing tertiary students in Singapore (Shorey et al., 2018).

### **Method**

A study was conducted using an experimental research design to examine the effectiveness of blended learning in teaching mathematics and its impact on students' academic performance, self-study abilities, and learning attitudes. The experimental group and control group were established based on pre-test results, with interventions, observations, and attitude surveys conducted in the experimental group while traditional lessons were delivered to the control group. Post-tests were then administered to both groups, and the outcomes were compared to evaluate the influence of blended learning.

### **Results**

The study's findings supported the effectiveness and importance of blended learning and the flex model in education. Teachers seeking to incorporate blended learning techniques into their teaching can benefit from these results. Future research could concentrate on developing specialized software and online platforms for blended learning, providing support to teachers in managing their responsibilities, and investigating the integration of blended learning in subjects or grade levels with limited access to technology for both educators and students. Future research could concentrate on developing specialized software and online platforms designed to enhance teaching and learning in blended learning settings. Investigating methods to reduce teachers'

burdens, particularly in overseeing blended learning, could also be a worthwhile research area. Furthermore, exploring the integration of blended learning in subjects or grade levels with restricted technology access for educators and students could offer additional insights into its efficacy.

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