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Factors Influencing Learning Engagement in Blended Learning Environments: A Review and Strategic Framework

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Abstract
This study explores the factors influencing learners' engagement in blended learning environments by synthesizing previous domestic and international research and examining practical enhancement strategies. Learning engagement, which includes behavioral, cognitive, and emotional dimensions, is increasingly recognized as a critical determinant of academic success in online, traditional, and hybrid instructional settings. Existing literature highlights multiple influencing variables such as motivation, self-efficacy, teacher support, peer collaboration, instructional design, and learning resources. While foreign studies often emphasize single-dimension perspectives, domestic studies tend to adopt multidimensional frameworks that integrate learner, teacher, peer, and environmental factors. In addition, several engagement models and intervention mechanisms have been proposed, focusing on activity design, communication management, and motivational regulation. Building upon these insights, the present work proposes phase-based strategies to enhance engagement across preparation, self-directed learning, consolidation, application, and evaluation stages of blended instruction. The findings underscore that structured instructional design, emotional support, and interactive learning opportunities collectively foster sustained learner participation and deeper knowledge construction in blended learning contexts.
Keywords: Blended Learning, Learning Engagement, Instructional Strategies, Motivation, Student Support, Educational Technology

Introduction

Learning engagement has emerged as a central concept in contemporary educational research due to its strong association with academic achievement, persistence, and learner satisfaction. With the rapid expansion of digital technologies and the integration of online

platforms into conventional classrooms, blended learning has become a dominant instructional model in higher education. Blended learning combines face-to-face teaching with online learning components, thereby offering flexibility, accessibility, and diversified learning experiences. However, the effectiveness of blended learning largely depends on the degree to which learners actively participate in and commit to the learning process.

Engagement is typically conceptualized through three interrelated dimensions: behavioral engagement (participation and effort), cognitive engagement (investment in understanding and critical thinking), and emotional engagement (interest and motivation). Researchers increasingly recognize that engagement is not merely an individual trait but a dynamic interaction shaped by pedagogical practices, technological infrastructure, social interaction, and institutional support. Therefore, identifying the factors that influence engagement and developing systematic strategies to enhance it are crucial for maximizing the benefits of blended learning environments.

Review of Literature

A substantial body of literature has examined the determinants of learning engagement across diverse educational settings. Early studies often focused on singular dimensions such as motivation or classroom participation, whereas more recent research emphasizes multidimensional frameworks integrating psychological, social, and environmental variables. Scholars have commonly categorized influencing factors into student-related, teacher-related, peer-related, and environmental dimensions. Student-related factors include intrinsic motivation, self-efficacy, learning preparedness, and self-regulation skills. Teacher-related variables encompass instructional design, feedback quality, emotional support, and expectations. Peer interaction and collaborative learning have also been identified as significant contributors, while environmental aspects involve technological accessibility, resource availability, and classroom atmosphere.

Several empirical models have been proposed to explain engagement in blended learning. Multidimensional models highlight active learning, teacher–student interaction, group collaboration, strategy use, emotional involvement, and self-management as core components. Other theoretical perspectives, such as social cognitive theory and motivational regulation theory, emphasize the mediating role of beliefs, task value, and perceived usefulness. International research has further explored communication management, satisfaction levels, and the structural relevance of learning activities as predictors of engagement.

In addition to identifying influencing factors, scholars have investigated mechanisms to enhance engagement. Suggested approaches include diversified activity design, formative assessment, personalized learning tasks, timely feedback, and digital resource integration. Principles such as maintaining intellectually stimulating environments, setting high expectations, and fostering social relationships have been validated across various institutional contexts, demonstrating the universal relevance of engagement-oriented pedagogical strategies.

Research on Factors Affecting Learning Engagement

As research on learning engagement continues to advance, many scholars have begun exploring the factors that may influence the engagement of different learners in various learning environments. In this study, we analyze the factors influencing learning engagement in online, blended, and traditional classroom settings. Among these, research on factors affecting learning engagement is most extensive and long-standing in blended learning environments. Research on factors influencing college students' learning engagement has been a consistent focus, whereas there is limited literature on factors affecting college students' learning engagement in blended learning environments. Multiple dimensions of factors influencing college students' learning engagement are of interest to many researchers.

Comparing foreign and domestic studies on factors affecting learning engagement, foreign scholars often focus on single-dimensional research, whereas domestic and foreign research on multidimensional factors influencing learning engagement began around the same time. However, foreign research on this topic is relatively scarce. For example, Zhang Lixia (2012) and her colleagues divided the factors influencing virtual classroom engagement into two dimensions: internal and external factors. They analyzed engagement factors related to learning preparedness, motivation, learning environment, and the organization and management of the learning process (Zhang et al., 2012). American scholar Guthrie (2013) explored the interconnections between motivation and learning engagement in concept-based reading instruction interventions (Guthrie, 2013).

A review of relevant literature, both domestic and foreign, reveals that the factors influencing learning engagement often revolve around motivation, individual students, teaching methods, teacher support, peer support, learning resources, and parental support. Most studies categorize these factors into dimensions such as students, teachers, peers, and the learning environment. For instance, Yang Mei's (2020) research on college students' learning engagement in blended learning environments primarily focuses on self-related factors, teacher-related factors, peer-related factors, and environmental factors (Yang, 2020). Pan (2017) adopting a multidimensional perspective on academic engagement based on motivational theories, examined the relationships between teacher and parental support, students' academic self-efficacy, and academic engagement (Pan, 2017).

Moreover, some researchers hold differing views on the factors influencing learning engagement. For instance, Yu Mingmei (2010) and her colleagues categorized 11 factors influencing engagement in online discussions into three categories: direct factors, intermediate factors, and deep-level factors (Yu, 2010). Kayode (2018) investigated communication management indicators in remote learning environments, specifically the relationship between communication practices, communication tools, and students' cognitive engagement in learning (Kayode, 2018). Numerous studies suggest that students, teachers, the learning environment, peers, and parents are major factors affecting learners' learning engagement. Specifically, these factors include:

Research Models of Blended Learning Engagement

Many researchers have attempted to explore research models of engagement in blended learning based on their understanding of its connotations. Ma Jing, using empirical research

methods, constructed a multi-dimensional model of learning engagement in blended learning environments, proposing that learning engagement in blended teaching environments includes six dimensions: active learning, teacher-student interaction, group collaboration, strategy use, self-management, and emotional engagement. Hu Chun proposed a model of engagement in blended teaching, considering perceived usefulness and perceived enjoyment as two direct influencing factors of engagement and perceived gains as the outcome of engagement (Hu, 2021). Additionally, Gong Shaoying suggested that motivational beliefs influence engagement in blended learning environments through the mediating role of motivational regulation (Gong, 2023). Wu Fati et al. studied learner engagement in blended learning environments from a self-regulation perspective, selecting task value and motivational regulation as key factors and analyzing their relationship with engagement in programming courses in blended learning environments. The results indicated that students' motivational regulation and task value significantly predict engagement (Zhong, 2022). Wei Y, based on social cognitive theory, built a model of influencing factors of engagement in blended learning, identifying self-efficacy, intrinsic motivation, and classroom atmosphere as major influencing factors (Panigrahi, 2021).

Mohd and colleagues explored the correlation between engagement in blended learning and teacher-student relationships, and factors enhancing engagement. The study showed significant positive correlations between blended learning satisfaction, teacher support, and student engagement (Mohd, 2020). Henrie found that the structure of teaching and the relevance of activities have the most significant impact on engagement (Henrie, 2015). Jia Fei analyzed the effects of teaching models and blended learning ratios on engagement, suggesting that increasing the proportion of face-to-face sessions in blended learning promotes engagement, although this effect is moderated by the levels of online resources, network, and interaction (Jia, 2021). Nie Miao, in the context of university English classrooms, investigated the factors influencing engagement in blended learning models, focusing on the integration and interaction of various factors such as teacher factors, peer factors, and learning environment in newly featured learning spaces. The study also provided optimization strategies from the perspective of course instructors (Nie, 2021).

Mechanisms for Enhancing Engagement in Blended Learning

Researchers have explored various ways to enhance student engagement in blended learning. In China, Zhou Yuan found that activity design in blended learning can improve engagement. Han Yanfeng analyzed the impact of different types of learning activities on behavioral, cognitive, and emotional engagement and proposed strategies to promote engagement based on these analyses (Han, 2021). Jiang Xiuyue suggested strategies for enhancing engagement in blended learning, such as providing rich learning resources, assigning relevant tasks and quizzes, conducting situational communication, and implementing targeted feedback and formative assessment (Jiang, 2023).

Wu Yan, based on interviews with learners in blended learning and analysis of engagement results, proposed the following strategies to promote engagement: increasing student persistence and focus through rewards, enhancing interaction through personalized tasks to promote behavioral engagement, stimulating interest, strengthening teacher-student emotional exchange, and creating a positive atmosphere to improve emotional engagement,

and promoting cognitive engagement by diversifying teaching methods and strengthening resource development Wu, 2021).

Zhang Jian believed that student engagement in blended learning can be improved through the integration of blended teaching models, changes in learning processes, improvement of evaluation systems, and creation of learning environments (Zhang, 2021).

In international research, Saman and colleagues suggested that regular push-pull and timely teaching mechanisms can enhance learner engagement in blended learning. The University of Alberta used blended learning as a research platform to explore student engagement in virtual learning spaces. They proposed four creative digital opportunities to maintain high engagement in face-to-face learning: diverse digital resources to activate engagement, learning scaffolds to deepen professional understanding, learner customization for sustained engagement and meaning creation, and real experiences to promote engagement. These aspects can support and promote student engagement in virtual learning design and instructional interventions (Saman, 2017).

Other scholars have proposed specific principles to enhance engagement. For example, Krause proposed ten principles to improve university student engagement: create and maintain an exciting intellectual environment, value academic work and set high standards, monitor student differences and respond to their impact on engagement, ensure clear expectations and responsiveness, cultivate social relationships, acknowledge challenges, provide targeted self-management strategies, carefully manage online learning experiences, and recognize the complexity of engagement policies and practices (Krause, 2014).

Zimba validated these principles in the context of nine South African universities implementing blended learning. Through qualitative research methods and interviews with educators from these universities, Zimba found that Krause's ten principles are also applicable to enhancing student engagement in blended learning contexts and can be used to analyze the current state and issues of blended learning in South African universities (Zimba, 2020).

Enhance Engagement in Blended Learning

This study aims to boost learners' engagement in blended learning by optimizing and refining blended learning activities. Based on different instructional phases of blended teaching practices, specific strategies are designed: During the preparation phase, strategies include goal value guidance, teacher expectation transmission, and technical resource guidance; in the self-directed learning phase, strategies encompass knowledge mapping, self-directed task sheets, online learning strategy guidance, progress tracking, learning supervision with reminders, and motivation stimulation; during the consolidation phase, strategies involve effective questioning, discussion design and facilitation, and interactive learning tools; for application and transfer, strategies focus on task design and guidance, collaborative learning method instruction, and instructional documents with supportive tools; in the evaluation and reflection phase, strategies include assessment feedback, peer review, and reflective guidance.

Discussion

The reviewed studies collectively indicate that learning engagement in blended environments is a multifaceted construct shaped by the interaction of personal, instructional, and contextual elements. A recurring theme across the literature is the central role of motivation and self-regulation, which function as both direct and mediating variables influencing learner participation. Teacher support and instructional structure consistently emerge as strong external predictors, suggesting that well-planned pedagogical frameworks can significantly compensate for learners' initial motivational disparities.

Another notable insight is the importance of phase-based instructional design. Engagement tends to fluctuate throughout different stages of the learning process, from preparation to reflection. Therefore, targeted strategies at each instructional phasesuch as goal orientation during preparation, scaffolding during self-directed learning, interactive discussions during consolidation, collaborative projects during application, and constructive feedback during evaluationcan sustain consistent engagement levels. Technological tools and digital platforms, when used purposefully, further enhance interactivity and accessibility, but they require pedagogical alignment to avoid superficial participation.

The discussion also reveals that emotional engagement is often underestimated despite its strong influence on persistence and satisfaction. Strategies that cultivate positive learning atmospheres, recognize student achievements, and encourage meaningful communication contribute significantly to long-term engagement outcomes.

Conclusion

Learning engagement is a decisive factor in the success of blended learning environments, encompassing behavioral, cognitive, and emotional dimensions that interact dynamically with instructional and contextual variables. The literature demonstrates that no single factor determines engagement; rather, it results from the combined influence of motivation, teacher support, peer interaction, learning resources, and effective instructional design. Models and strategies proposed by various scholars highlight the need for systematic, phase-oriented approaches that address learners' needs throughout the instructional cycle.

Ultimately, enhancing engagement in blended learning requires intentional planning, continuous feedback, and adaptive pedagogical practices supported by technology. By integrating motivational guidance, interactive activities, and reflective evaluation mechanisms, educators can create sustainable learning ecosystems that promote deeper understanding, learner autonomy, and academic success.

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