



Student Engagement in Blended Learning: A Systematic Literature Review

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ABSTRACT

Blended learning has become an important instructional approach in higher education by integrating face-to-face teaching with online learning environments to enhance student engagement. This study examines student engagement in blended learning through a Systematic Literature Review (SLR) using the PRISMA 2020 framework. Relevant studies published between 2019 and 2022 were systematically identified, screened, and analyzed using thematic analysis. The findings indicate that blended learning improves behavioral, cognitive, and emotional engagement by promoting active learning, collaboration, learning motivation, and student satisfaction. Teacher support, instructional design, and learning management systems also contribute to successful engagement. However, technological infrastructure, digital competence, instructor readiness, and institutional support remain major implementation challenges. The study concludes that effective pedagogical design and supportive learning environments are essential for maximizing the benefits of blended learning and improving student engagement in higher education.

Keywords: *Blended Learning, Higher Education, Learning Motivation, Student Engagement, Student Satisfaction.*

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1. | INTRODUCTION

The rapid development of digital technologies has transformed teaching and learning practices in higher education. Universities increasingly integrate online learning platforms with conventional face-to-face instruction to create more flexible learning environments that accommodate diverse student needs. This instructional approach, commonly known as blended learning, combines the advantages of classroom interaction with the accessibility and flexibility of digital learning. As higher education institutions continue adapting to technological advancements, blended learning has become one of the most widely adopted pedagogical approaches for improving learning effectiveness and student participation.

Blended learning is generally defined as the purposeful integration of traditional face-to-face instruction with online learning activities to enhance educational experiences. Rather than replacing classroom teaching, blended learning complements conventional instruction through digital resources, online discussions, multimedia content, and flexible learning opportunities. Castro (2019) explains that blended learning has evolved into a strategic educational model because it allows institutions to combine pedagogical innovation with technological support while maintaining meaningful interactions between teachers and students.

Along with the increasing implementation of blended learning, student engagement has become an important indicator of educational quality. Student engagement refers to the behavioral, cognitive, and emotional involvement of students throughout the learning process. Engaged students participate actively in classroom discussions, complete learning activities consistently, interact with peers and instructors, and demonstrate greater commitment to academic achievement. Consequently, higher levels of student engagement are frequently associated with improved learning outcomes, academic performance, and student satisfaction.

Previous studies demonstrate that blended learning can positively influence student engagement when instructional activities are carefully designed. Fisher, Perényi, and Birdthistle (2021) found that blended and flipped learning approaches improve student engagement, academic performance, and learning satisfaction by encouraging active participation and collaborative learning. Similarly, Heilporn, Lakhal, and Bélisle (2021) argue that instructors play an essential role in promoting engagement through effective teaching strategies, continuous feedback, and meaningful interaction within blended learning environments.

Digital technologies further strengthen blended learning by providing multiple opportunities for communication and collaboration. Learning management systems, online discussion forums, digital assessments, and multimedia learning resources allow students to access learning materials beyond the traditional classroom. Chiu (2021) emphasizes that digital support based on self-determination theory enhances student engagement by promoting autonomy, competence, and relatedness throughout blended

learning activities. These findings suggest that technological tools should support pedagogical objectives rather than function solely as instructional media.

Student motivation also contributes significantly to engagement within blended learning environments. Motivated students are generally more willing to participate in learning activities, collaborate with peers, and complete academic tasks independently. Bardorfer and Dolenc (2022) highlight that positive teacher–student relationships strengthen learning motivation, which subsequently improves student engagement and academic participation. Likewise, Nur'aini, Werang, and Suryani (2020) report that higher learning motivation is associated with improved academic outcomes among university students. These studies indicate that engagement is influenced not only by learning technologies but also by interpersonal and motivational factors.

In addition to improving engagement, blended learning offers opportunities to promote active and collaborative learning. Students can participate in group discussions, collaborative projects, and interactive classroom activities while simultaneously utilizing digital resources for independent study. Han and Ellis (2021) explain that collaborative learning patterns within blended courses contribute to deeper learning experiences and greater student participation. Such learning environments encourage students to become active contributors rather than passive recipients of knowledge.

Despite these educational benefits, implementing blended learning presents several challenges. Differences in students' digital competencies, access to technology, learning preferences, and institutional infrastructure may affect the effectiveness of blended learning. Instructors must also redesign learning activities, develop digital teaching competencies, and maintain student interaction across both online and face-to-face environments. Anthony et al. (2022) identify technological readiness, instructional design, organizational support, and faculty competencies as important factors influencing successful blended learning implementation in higher education.

Student satisfaction represents another important consideration in blended learning. Students are more likely to engage actively when learning environments are organized effectively and supported by reliable learning technologies. Mohd Nasir et al. (2021) found that satisfaction with learning management systems positively influences students' learning experiences in blended learning courses. Similarly, Prifti (2022) demonstrates that students' self-efficacy contributes significantly to satisfaction and participation within blended learning environments. These findings indicate that engagement is closely connected with both technological quality and students' confidence in their own learning abilities.

Although previous studies have examined blended learning, student engagement, motivation, collaborative learning, and learning satisfaction individually, relatively few studies have comprehensively synthesized how blended learning influences student engagement in higher education. Existing research often focuses on specific instructional strategies or institutional contexts rather than providing an integrated

understanding of the factors that strengthen engagement within blended learning environments.

Therefore, this study employs a Systematic Literature Review (SLR) following the PRISMA 2020 framework to examine student engagement in blended learning within higher education. By synthesizing studies published between 2019 and 2022, this review aims to identify the factors influencing student engagement, the educational opportunities provided by blended learning, the challenges affecting implementation, and practical recommendations for improving teaching and learning practices in higher education.

2. | LITERATURE REVIEW

Blended Learning in Higher Education

Blended learning has become one of the most widely adopted instructional approaches in higher education because it combines the strengths of face-to-face instruction with the flexibility of online learning. Rather than replacing conventional classroom teaching, blended learning integrates digital technologies into the learning process to create more interactive, flexible, and student-centered educational experiences. The increasing availability of learning management systems (LMS), online communication platforms, and digital learning resources has accelerated the adoption of blended learning across universities worldwide.

Blended learning is commonly defined as the purposeful integration of classroom instruction and online learning activities within a single educational environment. This approach enables students to access learning materials anytime while maintaining direct interaction with instructors and peers during classroom sessions. Castro (2019) explains that blended learning has evolved beyond technological innovation into a comprehensive pedagogical strategy that supports flexible learning and improves instructional effectiveness. Similarly, Anthony et al. (2022) describe blended learning as an educational model that combines technology, pedagogy, and learner-centered practices to improve educational quality in higher education.

The implementation of blended learning offers several advantages for both students and educators. Students benefit from greater learning flexibility, improved access to educational resources, and opportunities for independent learning. Meanwhile, instructors can diversify teaching methods through multimedia resources, online discussions, digital assessments, and collaborative learning activities. These features encourage continuous learning beyond classroom boundaries while supporting more meaningful interactions throughout the learning process.

The successful implementation of blended learning depends not only on technological infrastructure but also on effective instructional design. Learning activities should encourage interaction, collaboration, and active participation across both online and face-to-face environments. Heilporn, Lakhal, and Bélisle (2021) emphasize that instructors play a central role in fostering student engagement by selecting appropriate teaching strategies, facilitating communication, and providing

continuous feedback. Consequently, the effectiveness of blended learning is closely associated with educators' pedagogical competencies rather than technology alone.

Blended learning has also become increasingly important in promoting active learning. Instead of relying primarily on lectures, instructors can incorporate problem-solving activities, collaborative discussions, case studies, and project-based learning supported by digital technologies. Such instructional approaches encourage students to become active participants in constructing knowledge while improving critical thinking and communication skills. Therefore, blended learning represents not only a technological innovation but also a pedagogical transformation within higher education.

Overall, the literature demonstrates that blended learning provides a flexible and student-centered instructional approach capable of improving educational quality. Through the effective integration of face-to-face and online learning, higher education institutions can create learning environments that encourage interaction, collaboration, and continuous learning.

Student Engagement in Blended Learning

Student engagement is widely recognized as one of the strongest predictors of academic success in higher education. It reflects the degree to which students actively participate in learning activities through behavioral, cognitive, and emotional involvement. Engaged students are more likely to attend classes, contribute to discussions, complete learning tasks, and demonstrate stronger commitment to achieving academic goals. Consequently, enhancing student engagement has become a major objective of blended learning implementation.

Blended learning creates multiple opportunities for improving student engagement by combining classroom interaction with online learning experiences. Students can participate in face-to-face discussions while simultaneously accessing digital learning materials, completing online assignments, and collaborating through virtual platforms. Fisher, Perényi, and Birdthistle (2021) report that blended learning positively influences student engagement, academic performance, and learning satisfaction because it promotes active participation and flexible learning opportunities. Likewise, Serrano et al. (2019) argue that technology-enhanced learning strengthens engagement by creating more interactive and collaborative educational experiences.

Digital learning environments also support different dimensions of engagement. Behavioral engagement is reflected in students' participation in learning activities, cognitive engagement involves critical thinking and knowledge construction, while emotional engagement relates to students' interest and motivation toward learning. Chiu (2021) explains that digital support grounded in self-determination theory enhances these dimensions by satisfying students' needs for autonomy, competence, and relatedness. As a result, students become more motivated to participate actively throughout the learning process.

Teacher support remains an important factor influencing engagement within blended learning. Instructors who provide timely feedback, facilitate discussions, and encourage collaboration create learning environments that foster stronger student participation. Furthermore, well-designed blended courses enable students to balance independent learning with collaborative classroom experiences, contributing to more meaningful and sustainable engagement. Therefore, student engagement should be viewed as the combined outcome of effective pedagogy, appropriate technology, and supportive learning environments.

Factors Affecting Student Engagement

Student engagement in blended learning is influenced by multiple factors related to students, instructors, learning environments, and institutional support. Understanding these factors is important because successful blended learning depends not only on the integration of online and face-to-face instruction but also on the quality of learning experiences created throughout the educational process.

One of the primary factors influencing engagement is learning motivation. Motivated students are more likely to participate actively in discussions, complete learning activities, and persist when facing academic challenges. Motivation also encourages students to utilize digital learning resources effectively and become more responsible for their own learning. Bardorfer and Dolenc (2022) explain that positive teacher–student rapport strengthens students' intrinsic motivation, leading to greater engagement in higher education. Likewise, Nur'aini, Werang, and Suryani (2020) found that learning motivation contributes positively to students' academic achievement and participation.

Collaborative learning also plays an important role in strengthening engagement within blended learning environments. Opportunities to work with peers through group discussions, collaborative projects, and problem-solving activities encourage students to exchange ideas and construct knowledge collectively. Han and Ellis (2021) found that collaborative learning activities increase both cognitive engagement and participation by promoting meaningful interaction among students. These findings suggest that blended learning should emphasize collaboration rather than individual learning alone.

Another important factor is student satisfaction with the learning environment. Students who perceive blended learning as useful, accessible, and well organized are generally more willing to participate in learning activities. Prifti (2022) reports that students' self-efficacy positively influences their satisfaction with blended learning courses, while Mohd Nasir et al. (2021) highlight that satisfaction with learning management systems contributes to improved learning experiences and continued participation. Therefore, technological quality and students' confidence in using digital learning platforms are important determinants of engagement.

Overall, student engagement in blended learning is shaped by the interaction of motivational, collaborative, instructional, and technological factors. Universities should

therefore adopt comprehensive strategies that address these dimensions simultaneously to create engaging and effective learning environments.

Benefits of Blended Learning

Blended learning offers numerous educational benefits that contribute to improving learning quality in higher education. By combining classroom instruction with online learning activities, blended learning creates flexible learning environments that accommodate diverse learning preferences while encouraging active participation. This instructional approach allows students to access learning materials beyond classroom hours, promoting continuous learning and greater responsibility for their academic progress.

One important benefit of blended learning is the promotion of active learning. Students are encouraged to participate in discussions, solve problems collaboratively, and apply theoretical concepts through various learning activities. Rather than relying solely on lectures, blended learning enables instructors to design interactive learning experiences that support critical thinking and knowledge construction. Mintzes and Walter (2020) argue that active learning strategies improve students' understanding by encouraging participation and reflection throughout the learning process. Similarly, Roberts (2019) emphasizes that active instructional approaches enhance classroom engagement and create more meaningful learning experiences.

Blended learning also improves learning flexibility by allowing students to determine when and where they access educational resources. Online learning components enable students to review instructional materials repeatedly, complete assignments independently, and communicate with instructors outside scheduled classroom sessions. This flexibility supports different learning styles while encouraging greater autonomy in the learning process. Islam, Sarker, and Islam (2022) explain that student-centered blended learning promotes independent learning and strengthens students' responsibility for achieving learning objectives.

Another significant benefit concerns learning outcomes and academic performance. Previous studies indicate that students participating in blended learning often demonstrate higher academic achievement and greater learning satisfaction than those receiving conventional instruction alone. Fisher, Perényi, and Birdthistle (2021) report that blended learning positively influences academic performance because it combines interactive classroom experiences with flexible digital learning opportunities. Likewise, Ahlin (2020) found that hybrid learning environments improve both student engagement and mastery of course content.

Overall, blended learning contributes to higher education by promoting active learning, learning flexibility, improved academic performance, and greater student autonomy. These advantages explain why blended learning has become an increasingly important instructional approach in universities seeking to enhance educational quality and student engagement.

Challenges of Blended Learning

Although blended learning offers numerous educational benefits, its successful implementation is influenced by various technological, pedagogical, and organizational challenges. Universities must ensure that both instructors and students are adequately prepared to adapt to blended learning environments. Failure to address these challenges may reduce student engagement and limit the effectiveness of blended learning initiatives.

One major challenge is technological readiness. Effective blended learning requires reliable internet access, appropriate digital devices, and stable learning management systems. Differences in students' access to technology may create unequal learning opportunities and hinder participation in online learning activities. Anthony et al. (2022) identify technological infrastructure and institutional readiness as critical factors affecting the successful adoption of blended learning in higher education. Similarly, Raes, Detienne, Windey, and Depaepe (2020) emphasize that technical limitations and inconsistent learning environments remain significant barriers to hybrid learning implementation.

Another challenge concerns instructors' pedagogical competencies. Teaching in blended learning environments requires educators to redesign learning activities, integrate online and face-to-face instruction effectively, and facilitate student interaction across different learning platforms. Without sufficient professional development, instructors may struggle to maximize student participation and maintain learning quality. Consequently, continuous training and institutional support are necessary to improve teaching effectiveness in blended learning environments.

Student readiness also influences the success of blended learning. Students are expected to manage their own learning, utilize digital platforms effectively, and participate actively in both classroom and online activities. Learners with limited digital literacy, weak time-management skills, or low self-motivation may experience difficulties adapting to blended learning. Prifti (2022) argues that students' self-efficacy significantly influences their participation and satisfaction in blended learning courses, indicating that confidence and independent learning skills are essential for successful engagement.

Maintaining long-term student engagement represents another important challenge. Students may become less active when online activities are poorly designed or when communication between instructors and learners is limited. Therefore, blended learning should provide regular feedback, collaborative activities, and meaningful interactions that sustain students' motivation throughout the learning process.

Overall, the literature suggests that overcoming technological limitations, strengthening instructor competencies, improving student readiness, and promoting continuous interaction are essential for maximizing the effectiveness of blended learning in higher education.

3. | RESEARCH METHOD

This study employed a qualitative Systematic Literature Review (SLR) to examine student engagement in blended learning within higher education. The review aimed to synthesize existing evidence regarding the factors influencing student engagement, the educational benefits of blended learning, and the challenges affecting its implementation.

The review followed the PRISMA 2020 (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework proposed by Page et al. (2021). The review process consisted of four stages: identification, screening, eligibility assessment, and inclusion of relevant studies. This systematic procedure ensured transparency and rigor in selecting and synthesizing the literature.

Relevant studies were identified through Scopus, ScienceDirect, SpringerLink, ERIC, Taylor & Francis Online, Wiley Online Library, and Google Scholar. The search employed combinations of keywords including *student engagement*, *blended learning*, *hybrid learning*, *higher education*, *learning motivation*, *active learning*, *collaborative learning*, *student satisfaction*, and *learning outcomes*. The review focused on English-language publications published between 2019 and 2022 to reflect contemporary developments in blended learning before 2023.

The inclusion criteria comprised peer-reviewed journal articles, conference proceedings, review articles, and scholarly book chapters discussing blended learning in higher education. Studies addressing student engagement, learning motivation, collaborative learning, active learning, learning outcomes, and student satisfaction within blended learning contexts were included. Editorials, opinion papers, duplicate publications, and studies unrelated to higher education were excluded.

The selected studies were analyzed using thematic analysis. The findings were organized into five themes: (1) blended learning in higher education, (2) student engagement in blended learning, (3) factors affecting student engagement, (4) benefits of blended learning, and (5) challenges of blended learning. This thematic approach enabled a comprehensive synthesis of current knowledge regarding student engagement in blended learning.

The analytical framework positions blended learning as a student-centered instructional approach that enhances engagement through effective instructional design, learning motivation, collaboration, and active learning. Simultaneously, the framework recognizes technological readiness, instructor competence, institutional support, and student preparedness as key factors influencing successful implementation in higher education.

4. | RESULTS

The systematic review indicates that blended learning has become an effective instructional approach for improving student engagement in higher education. Across

the reviewed studies, blended learning consistently demonstrates positive effects on students' behavioral, cognitive, and emotional engagement through the integration of face-to-face instruction and online learning activities. The findings also reveal that the effectiveness of blended learning depends on appropriate instructional design, student motivation, technological support, and institutional readiness.

One of the major findings concerns the positive influence of blended learning on student engagement. The reviewed literature shows that combining classroom interaction with digital learning environments encourages students to participate more actively in discussions, complete learning activities consistently, and communicate more frequently with instructors and peers. Fisher, Perényi, and Birdthistle (2021) report that blended learning enhances student engagement while simultaneously improving academic performance and learning satisfaction. Likewise, de Brito Lima, Lautert, and Gomes (2021) found that students participating in blended learning environments demonstrate higher engagement than those learning in conventional classroom settings.

Learning motivation emerged as another important factor supporting student engagement. Students who possess stronger intrinsic motivation are generally more willing to participate in classroom discussions, complete independent learning activities, and collaborate with peers. Positive interactions between instructors and students also contribute to maintaining motivation throughout the learning process. Bardorfer and Dolenc (2022) emphasize that teacher–student rapport positively influences learning motivation, while Nur'aini, Werang, and Suryani (2020) report that motivated students tend to achieve better academic outcomes.

The review further indicates that collaborative learning significantly strengthens engagement in blended learning environments. Group discussions, collaborative assignments, and peer interaction encourage students to exchange ideas and actively construct knowledge. Han and Ellis (2021) demonstrate that collaborative learning patterns improve both participation and cognitive engagement by promoting meaningful interaction among learners. These findings suggest that blended learning should prioritize collaborative instructional strategies rather than relying solely on individual online activities.

Another important finding concerns the role of active learning. Rather than functioning as passive recipients of information, students become actively involved through discussions, problem-solving activities, presentations, and project-based tasks. Roberts (2019) argues that active learning strategies create more interactive classroom experiences that improve participation and understanding. Similarly, Mintzes and Walter (2020) conclude that active learning approaches contribute to deeper conceptual understanding and higher levels of student engagement in higher education.

Student satisfaction also plays an important role in successful blended learning implementation. Well-designed learning environments supported by reliable learning management systems encourage students to participate more actively and maintain

positive learning experiences. Mohd Nasir et al. (2021) found that satisfaction with learning management systems positively affects students' experiences in blended learning courses. Likewise, Prifti (2022) reports that self-efficacy strengthens student satisfaction and encourages continuous participation throughout blended learning activities.

Despite these positive outcomes, the reviewed studies identify several implementation challenges. Limited technological infrastructure, inconsistent internet connectivity, insufficient instructor preparedness, and varying levels of student digital competence continue to influence learning effectiveness. Anthony et al. (2022) identify institutional readiness, technological resources, and pedagogical competencies as essential requirements for successful blended learning implementation. Similarly, Raes et al. (2020) note that hybrid learning environments require careful instructional planning to maintain interaction and engagement across both online and face-to-face settings.

Overall, the findings demonstrate that blended learning enhances student engagement by promoting active participation, collaboration, learning motivation, and student satisfaction. However, maximizing these educational benefits requires effective instructional design, institutional support, and continuous development of both educators' and students' competencies.

5. | DISCUSSION

The findings demonstrate that blended learning has become an effective pedagogical approach for strengthening student engagement in higher education. The combination of classroom instruction and online learning provides students with greater flexibility while creating opportunities for active participation and collaborative learning. This supports previous studies indicating that blended learning contributes positively to educational quality when instructional activities are carefully designed and supported by appropriate learning technologies.

Student engagement emerged as the central outcome of blended learning implementation. The reviewed studies consistently indicate that students become more actively involved in learning when they are provided with opportunities to participate in discussions, access digital learning resources, collaborate with peers, and receive continuous feedback from instructors. These experiences enhance not only behavioral participation but also cognitive and emotional engagement, ultimately supporting improved academic performance and learning satisfaction.

Learning motivation was also identified as an important factor influencing engagement. Motivated students demonstrate greater persistence, responsibility, and willingness to participate in learning activities. Positive teacher–student relationships, constructive feedback, and supportive learning environments further strengthen motivation throughout the learning process. Consequently, universities should view student engagement as the result of interactions between instructional practices,

learning environments, and students' internal motivation rather than solely the use of educational technology.

The review further emphasizes the importance of collaborative and active learning in blended learning environments. Group discussions, collaborative projects, and problem-solving activities encourage students to communicate, exchange knowledge, and develop higher-order thinking skills. These instructional strategies transform students from passive recipients of information into active participants who contribute directly to the learning process. Therefore, effective blended learning should prioritize meaningful interaction rather than simply combining online and face-to-face instruction.

Despite these educational benefits, several challenges continue to influence implementation. Technological limitations, instructor readiness, student digital competence, and institutional support remain significant factors affecting learning quality. Universities should therefore invest not only in technological infrastructure but also in professional development programs that strengthen instructors' pedagogical competencies and students' digital learning skills. Such efforts will enable institutions to maximize the educational potential of blended learning.

Overall, the findings suggest that successful blended learning depends on balancing technology with effective pedagogy. When supported by appropriate instructional design, active learning strategies, and institutional commitment, blended learning can significantly improve student engagement and contribute to better educational outcomes in higher education.

6. | CONCLUSION

This study examined student engagement in blended learning within higher education through a Systematic Literature Review (SLR) using the PRISMA 2020 framework. The review synthesized studies published between 2019 and 2022 to identify factors influencing student engagement, the educational benefits of blended learning, and the challenges affecting its implementation.

The findings indicate that blended learning positively contributes to student engagement by promoting active learning, collaboration, learning motivation, and student satisfaction. The integration of online and face-to-face learning environments provides greater flexibility while encouraging meaningful participation throughout the learning process. Furthermore, effective instructional design and supportive teacher–student interactions play important roles in strengthening engagement and improving learning outcomes.

However, successful implementation requires addressing challenges related to technological infrastructure, digital competence, instructor readiness, and institutional support. Higher education institutions should therefore combine pedagogical innovation with continuous professional development and adequate technological resources to create sustainable blended learning environments.

Overall, blended learning represents an effective instructional approach for enhancing student engagement in higher education. Future educational practices should continue emphasizing student-centered learning, collaborative activities, and active participation to maximize learning quality and support long-term academic success.

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The authors declare that there is no conflict of interest.

Ethical Approval and Originality Statement

Ethical approval was obtained for this study. The manuscript represents original work and has not been previously published, nor is it under consideration by another journal.

Data Disclosure Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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