

Blended Learning in English Language Instruction: A Study of Learner Engagement and Performance

¹Septien Dwi Savandha*, ²Muhammad Yusuf Daffa*, ³Adila Kamilia

¹Universitas Swadaya Gunung Jati, Indonesia, ^{2,3}UIN Sunan Gunung Djati Bandung, Indonesia

Corresponding email: ¹dwisavandha9@gmail.com*,

²muhammadyusufdaffa712@gmail.com, ³kamiliaadila3@gmail.com

Abstract *The development of digital technology has encouraged implementing blended learning as a learning strategy that combines face to face and online learning methods. In English language learning, blended learning is believed to enhance learners' participation and learning outcomes; however, empirical evidence on its effectiveness remains limited. This study aims to analyze the effect of blended learning implementation on learners' engagement and performance in English language learning at the secondary education level. This study used a quantitative approach with a quasi-experimental design. The sample consisted of 120 students from two high schools that were purposively selected. The experimental group employed a Learning Management System (LMS)-based blended learning model, whereas the control group followed conventional learning methods. Data were collected through a learning engagement questionnaire and an English achievement test, then analyzed using an independent t-test and simple linear regression. The results showed that students in the blended learning group had higher levels of engagement and significantly better learning achievement than the control group ($p < 0.05$). The findings suggest that blended learning can effectively enhance the quality of English language learning, particularly by increasing students' active participation and academic outcomes.*

Keywords: *blended learning, English language learning, student engagement, academic performance, digital learning model*

1. Introduction

English language instruction faces significant challenges in many Indonesian secondary schools, particularly in the aftermath of the pandemic. Students often show decreased participation in speaking activities due to prolonged exposure to passive online learning, while teachers struggle to balance curriculum demands with limited digital infrastructure. Additionally, disparities in students' digital literacy and access to devices have created learning gaps that are difficult to close solely through conventional classroom methods. These real-world obstacles highlight the need for adaptive instructional approaches to bridge in-class interaction with technology-enhanced learning environments.

The development of information technology in the last two decades has driven transformation in education, including in English language learning (Adnan, 2018; Graham, 2019; Hrastinski, 2019). One of the increasingly popular approaches is blended learning, which combines face to face learning with online digital technology (Bonk & Graham, 2006; Garrison & Kanuka, 2004; Rasheed et al., 2020). In language

learning, this approach is believed to enhance learning motivation, offer flexibility, and accommodate students' diverse learning styles (Means et al., 2014; Alammmary, 2019; Widodo, 2020).

Following the COVID-19 pandemic, many secondary schools in Indonesia are struggling with the residual effects of prolonged remote learning, particularly in English language education. Teachers report that students often exhibit lower levels of speaking confidence, reduced vocabulary recall, and weaker interaction skills, primarily due to the lack of consistent oral practice during online classes. Moreover, disparities in digital access and competence among students have widened the achievement gap, especially between urban and rural areas. These conditions are further compounded by the fact that many teachers receive limited training in integrating technology effectively into language instruction. As schools adopt blended learning models, educators face the dual challenge of restoring students' communicative competence while simultaneously navigating the demands of digital platforms and curriculum alignment.

Although many educational institutions have adopted the blended learning model, not all have implemented it effectively in English language learning, especially at the secondary school level (Sari & Wahyudin, 2021; Nurhadi et al., 2022; Cheng, 2023). Challenges in implementing blended learning include teacher readiness, infrastructure limitations, and lack of data-based studies on its impact on student engagement and learning outcomes (Halverson et al., 2017; Boelens et al., 2017; Mahyoob, 2020). In the Indonesian context, evaluations of online learning conducted during and after the pandemic revealed that many students found it challenging to stay motivated and engaged without face to face interaction (Kemendikbudristek, 2021). Furthermore, teachers expressed concerns about the effectiveness of locally used learning management systems (LMS), citing issues such as poor user interface, limited internet access, and insufficient training on digital pedagogy. These findings highlight the complexity of implementing blended learning models in secondary schools and underscore the need for more empirical evidence on their effectiveness, particularly in enhancing speaking skills within EFL classrooms in Indonesia. This research is important to address the need for empirical evidence on the effectiveness of blended learning in the local context.

Theoretically, blended learning is supported by constructivist learning theory, which emphasizes the active role of students in constructing knowledge through direct learning experiences and digital interactions (Vygotsky, 1978; Piaget, 1952; Dziuban et al., 2018). In addition, the Community of Inquiry Framework, developed by Garrison et al. (2000), emphasizes the importance of social, cognitive, and instructional engagement in blended online learning. Previous research has shown that blended learning can increase engagement by 20% and average academic

outcomes by 15% compared to traditional methods (Means et al., 2013; Bernard et al., 2014; Owston et al., 2019).

Table 1. Comparison of Engagement Levels and Learning Outcomes in Learning Models

Learning Model	Average Engagement Score	Average Final Test Score
Conventional	62.4	71.3
Blended Learning	78.6	83.9

Source: Means et al. (2013); Owston et al. (2019); Dziuban et al. (2018)

The data presented in the table clearly shows that blended learning models yield higher average engagement scores (78.6) and final test scores (83.9) compared to conventional learning methods, which scored 62.4 and 71.3, respectively (Means et al., 2013; Owston et al., 2019; Dziuban et al., 2018). This evidence highlights the potential of blended learning to enhance both student motivation and academic achievement. In the Indonesian context, where challenges such as limited student participation and unequal access to quality learning resources persist, these findings underscore the urgent need to explore and adapt blended learning approaches more effectively. Given that many Indonesian secondary schools are still struggling with low engagement and learning outcomes, particularly in English language education following the pandemic, this data supports the rationale for conducting empirical studies to evaluate and optimize the implementation of blended learning tailored to local conditions.

Several studies have demonstrated that blended learning enhances learning outcomes and student satisfaction in the context of English language learning across various countries (Wu et al., 2010; Yen et al., 2018; Harasim, 2017). In Indonesia, research by Pratama & Ardi (2020) and Lestari et al. (2021) showed similar results in higher education. However, few studies have focused on secondary school students and how this model affects learning engagement specifically (Hidayat & Sari, 2022; Hamzah et al., 2023; Yusuf & Sulaiman, 2021).

The research gap lies in the lack of empirical studies on how blended learning affects student engagement and academic performance simultaneously in the context of secondary English language learning (Boelens et al., 2017; Rasheed et al., 2020; Cheng, 2023). Most previous studies have only reviewed the cognitive aspect without considering the affective and behavioral dimensions of engagement (Fredricks et al., 2004; Henrie et al., 2015; Reeve, 2013).

This research makes a novel contribution by combining the analysis of student engagement and academic performance within a single quasi-experimental study framework. In addition, the focus on Indonesian secondary school students provides

a contextual perspective that has not been extensively researched (Suryani & Rahmat, 2021; Ningsih et al., 2022; Aditya, 2023). The blended learning model employed in this study integrates a local Learning Management System (LMS) platform with an interactive, task based learning approach.

This study aims to empirically analyze the effect of a blended learning model on students' learning engagement and academic outcomes in secondary level English language learning in Indonesia. It also aims to identify the engagement dimensions most dominantly influenced by the blended learning model (Fredricks et al., 2004; Reeve, 2013; Alammery, 2019).

2. Method

Type of Research

This quantitative study uses a quasi-experimental design approach with a nonequivalent control group design. This design was chosen to compare the experimental group, which followed blended learning, with the control group, which followed conventional learning, despite the researcher not having randomized the research subjects (Creswell, 2012; Ary et al., 2019; Fraenkel et al., 2015). Several efforts were made to equalize treatment between the two groups to control extraneous variables and ensure that outcome differences were primarily due to the learning models. Both groups were taught by the same teacher, ensuring consistent instructional style and delivery. Additionally, the teacher employed the same lesson plans, materials, and assessment criteria for both groups. Hence, the only variable that differed was the mode of instruction, blended learning versus conventional learning. The blended learning model employed in this study consisted of 50% face to face synchronous sessions and 50% online learning activities conducted through an interactive learning management system (LMS) over 8 weeks. This balance was designed to maximize student engagement and flexibility while maintaining direct interaction with the teacher. These controls aimed to reduce potential biases and increase the study's internal validity.

Population and Sampling

The population in this study was all grade XI students from two public high schools in Yogyakarta City who took English subjects in the 2024/2025 academic year. The sampling technique used was purposive sampling, which considered the similarity of curriculum, ICT facilities, and teacher readiness in using the LMS. The sample consisted of two classes from each school, totaling 120 students, which were divided into an experimental group ($n = 60$) and a control group ($n = 60$) (Sugiyono, 2018; Cohen et al., 2018; Lodico et al., 2010).

Research Instrument

The student engagement questionnaire, adapted from Fredricks et al. (2004), covered three dimensions: cognitive, affective, and behavioral engagement. The questionnaire consisted of 30 items and was validated by three experts in educational psychology and language education. The instrument trial produced a Cronbach's Alpha value of 0.88, indicating high internal consistency.

The multiple-choice English learning outcome test was developed based on curriculum indicators relevant to the 2024/2025 academic year. It comprises 40 items and underwent expert validation by two curriculum specialists and one English teacher. Item analysis and a pilot test yielded a Cronbach's Alpha of 0.81, suggesting good reliability.

An observation sheet was created to monitor the implementation of blended learning and ensure procedural consistency across classes. The observation sheet included 12 checklist items validated by two instructional design experts. Inter-rater reliability was ensured through observer training, achieving a Cohen's kappa coefficient of 0.79, indicating substantial agreement (Gall et al., 2007; Dörnyei, 2007; Fraenkel et al., 2015).

Data Collection Technique

Learning outcome tests were administered before (pre-test) and after (post-test) the treatment in both groups to measure the improvement in students' cognitive abilities in learning English. Student engagement questionnaires were distributed online at the end of the learning period to obtain data on students' cognitive, affective, and behavioral engagement during the blended learning process.

Observations of the blended learning implementation were conducted weekly to assess the suitability of the learning design. The components observed included: (1) Student activities (e.g., attendance, participation in LMS forums, involvement in group discussions); (2) Quality of digital materials (e.g., clarity of videos, integration with face to face materials, interactivity); (3) Teacher involvement (e.g., providing feedback, attending synchronous sessions, managing online discussions).

Two trained observers conducted the observations, and inter-rater reliability tests were performed to ensure consistency in the assessment. The test results yielded a Cohen's Kappa value of 0.81, which falls within the high agreement category (substantial agreement) (Creswell & Plano Clark, 2017; Cohen et al., 2018; Sugiyono, 2018).

Research Procedure

The research procedure included several stages as follows:

1. Preparation stage: instrument development, validation, and teacher training;
2. Implementation phase: implementation of blended learning model in the experimental group for 6 weeks, and conventional learning in the control group;
3. Evaluation phase: data collection through post-test and questionnaire;
4. Data analysis and reporting of research results (Ary et al., 2019; Creswell, 2012; Fraenkel et al., 2015).

Data Analysis Technique

Data were analyzed using both descriptive and inferential statistical approaches:

Descriptive analysis was employed to summarize and present the distribution, mean, and standard deviation of student engagement and learning outcome scores in both experimental and control groups.

Normality and homogeneity tests were conducted using the Kolmogorov-Smirnov and Levene's tests to assess whether the data met the assumptions required for parametric testing.

An independent samples t-test was applied to determine whether there were statistically significant differences in engagement and learning outcomes between students in the blended learning group and those in the conventional group.

Multiple linear regression analysis was used to examine the extent to which the three dimensions of engagement (cognitive, affective, and behavioral) predicted learning outcomes while controlling for the type of learning model (treatment group). This allowed the analysis to isolate the effect of engagement on student performance, independent of whether students received blended or conventional instruction (Pallant, 2020; Field, 2018; Hair et al., 2019).

3. Result & Discussion

The Effect of Blended Learning on English Learning Outcomes

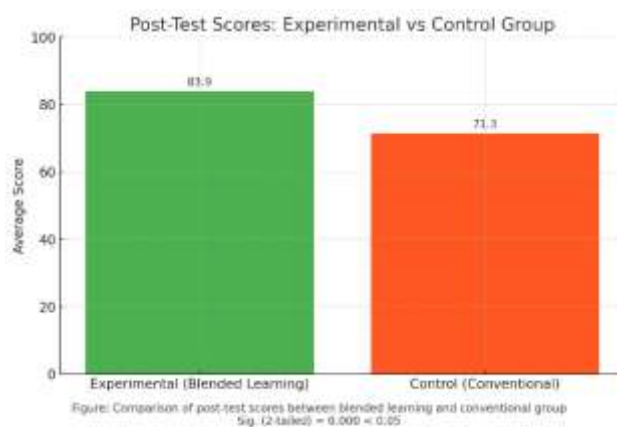


Figure 1. Data

The data analysis showed a significant difference between the post-test scores of students in the experimental and control groups. The average value for the

experimental group was 83.9, while the control group had an average value of 71.3. The independent t-test yielded a statistically significant result. (2-tailed) A p-value of $0.000 < 0.05$ indicates that blended learning has a positive influence on student learning outcomes (Means et al., 2013; Bernard et al., 2014; Field, 2018).

This finding supports previous research that technology integration in learning can improve academic outcomes as students have wider access to materials, faster feedback, and higher interactivity (Dziuban et al., 2018; Graham, 2019; Owston et al., 2019). In addition, LMS-based learning enables the personalization of learning, which aligns with social constructivist theory (Vygotsky, 1978; Garrison & Kanuka, 2004; Hrastinski, 2019).

Pedagogically, blended learning provides space for guided practice, allowing students to remain more engaged in continuous learning (Bonk & Graham, 2006; Alammery, 2019; Fredricks et al., 2004). This approach also reinforces understanding as students can revisit online materials and discussions (Rasheed et al., 2020; Mahyoob, 2020; Cheng, 2023).

This effectiveness can be attributed to the flexibility of learning time, control over learning pace, and the integration of multimedia that supports linguistic understanding (Yen et al., 2018; Wu et al., 2010; Widodo, 2020). Therefore, implementing blended learning needs to be formulated systematically to create an optimal learning experience.

Although blended learning has shown effectiveness in improving learning outcomes, it is necessary to critically analyze whether the differences in results are not solely due to the learning model itself. Other factors, such as the teacher's teaching style, technological readiness within each school, and student characteristics, can also influence the results. Additionally, the possibility of a "novelty effect" also needs to be considered, where students exhibit increased motivation and engagement due to new methods being perceived as more interesting at the beginning of implementation. This effect tends to be temporary and can decrease over time if not supported by consistent and meaningful ongoing learning strategies. Therefore, the success of blended learning should not only be measured by short-term improvements but also by its long-term sustainability.

Level of Engagement in the Blended Learning Model

Student engagement was analyzed from cognitive, affective, and behavioral dimensions. The questionnaire results showed that the average student engagement score in the experimental group was 78.6 compared to 62.4 in the control group. The behavioral dimension showed the highest improvement, followed by the cognitive and affective dimensions (Fredricks et al., 2004; Reeve, 2013; Henrie et al., 2015).

The blended learning model encourages behavioral engagement through structured activities on the Learning Management System (LMS), such as interactive quizzes, discussion forums, and project assignments that require students to interact actively (Boelens et al., 2017; Alammery, 2019; Hrastinski, 2019). This is different from conventional learning, which tends to be one-way and less interactive (Suryani & Rahmat, 2021; Cheng, 2023; Ningsih et al., 2022).

However, it is essential to consider that the observed differences in engagement may not be solely due to the learning model. Other influencing factors could include the teacher's instructional style, the quality and accessibility of digital infrastructure, and varying school environments. For example, a teacher with high digital literacy may better utilize Learning Management System (LMS) features, thus increasing perceived engagement. Furthermore, the increase in engagement could partially result from the "novelty effect," where students show higher enthusiasm simply due to exposure to a new or unfamiliar learning method. This temporary boost may decline unless the novelty is sustained with meaningful learning design and continuous innovation. Therefore, while blended learning demonstrates potential, its long-term effectiveness must be critically evaluated beyond initial implementation phases.

Table 1. Average Engagement Score by Dimension

Dimensions of Engagement	Experiment Group	Control Group
Cognitive	26.4	21.2
Affective	25.1	20.4
Behavior	27.1	20.8
Total Score	78.6	62.4

Source: Adaptation of Fredricks et al. (2004); Researcher's Analysis (2025)

The affective dimension also shows improvement, characterized by increased motivation, confidence, and comfort learning in an online environment (Reeve, 2013; Harasim, 2017; Widodo, 2020). The LMS facilitates quick feedback and participation without social pressure, thus strengthening students' commitment to the learning process (Dörnyei, 2007; Rasheed et al., 2020; Garrison et al., 2000).

Blended learning has been proven to be more effective in fostering holistic learning engagement, as it integrates technology-based pedagogical approaches and social interaction (Fredricks et al., 2004; Dziuban et al., 2018; Graham, 2019).

The Relationship Between Engagement and Learning Outcomes

Simple linear regression analysis showed a positive and significant relationship between student engagement and English learning outcomes ($R^2 = 0.476$; $p < 0.01$). This indicates that 47.6% of the variation in learning outcomes can be attributed to the level of student engagement (Hair et al., 2019; Field, 2018; Pallant, 2020).

This relationship reinforces the argument that student engagement is a key indicator of academic success, as stated in various theoretical models, including Self-Determination Theory and the Community of Inquiry Framework (Deci & Ryan, 2000; Garrison et al., 2000; Fredricks et al., 2004). Learning that fosters high engagement will lead to a more profound and sustained understanding of concepts (Henrie et al., 2015; Boelens et al., 2017; Cheng, 2023).

In blended learning, the cognitive dimension of engagement significantly contributes to academic achievement as students actively construct knowledge, seek additional information, and evaluate their understanding independently (Garrison & Kanuka, 2004; Means et al., 2013; Reeve, 2013). This is also reinforced by the broader opportunities for online discussion and reflection compared to conventional classes (Bonk & Graham, 2006; Harasim, 2017; Dziuban et al., 2018).

High engagement positively impacts grades and the development of essential soft skills, including time management, collaboration, and critical thinking (Yen et al., 2018; Cheng, 2023; Widodo, 2020). Therefore, blended learning is particularly relevant in the context of the pandemic and as a future learning model.

Pedagogical Implications and Implementation Recommendations

The results of this study provide important implications for teachers and education policymakers. First, teachers must develop competence in LMS-based learning design that prioritizes student engagement in three dimensions (Fredricks et al., 2004; Dörnyei, 2007; Garrison et al., 2000). Second, schools must provide infrastructure and ongoing training to support blended learning models (Halverson et al., 2017; Mahyoob, 2020; Boelens et al., 2017).

The curriculum should also be flexibly designed to integrate technology with active and participatory approaches (Cohen et al., 2018; Graham, 2019; Suryani & Rahmat, 2021). This is important so that blended learning is not just an add-on, but an integral part of student-centered learning strategies (Vygotsky, 1978; Rasheed et al., 2020; Hrastinski, 2019).

However, this study also has several limitations that need to be acknowledged. The quasi-experimental design, lacking random assignment, may have introduced selection bias, and contextual variables such as teacher digital literacy and school support were not fully controlled. Additionally, the short intervention duration may limit the generalizability of the findings, particularly regarding long-term engagement and learning outcomes. Future research should consider employing multilevel or

longitudinal analysis to investigate the sustained impact of blended learning, as well as incorporating qualitative approaches to gain a deeper understanding of student perceptions and learning experiences. A more comprehensive theoretical exploration integrating learning motivation, digital literacy, and instructional design theories would also enrich the practical application of these findings in diverse educational contexts.

4. Conclusion

This study demonstrates that implementing a blended learning model in English language learning significantly enhances student learning engagement and academic outcomes at the senior high school level. Results from the quasi-experimental design showed that students in the blended learning group achieved higher post-test scores and demonstrated better levels of learning engagement across cognitive, affective, and behavioral dimensions, compared to students in the control group.

Data analysis also revealed a strong positive relationship between student engagement and achievement of learning outcomes. This reinforces the social constructivism theory and the Community of Inquiry framework, which emphasize the importance of interaction, active participation, and learning autonomy in digital learning environments. Thus, blended learning has been proven to be an approach that is not only adaptive to technological developments but also pedagogically effective in enhancing the quality of English language learning.

The novelty of this research lies in integrating the analysis of student engagement and learning outcomes in a single, quantitative, data-driven study within an Indonesian secondary school context. Previous research has limitedly explored this area. This research provides evidence-based recommendations for educators and policymakers to make blended learning a sustainable learning model that meets the demands of 21st-century learning.

Further research is recommended to explore the long-term impact of blended learning, integrate qualitative approaches, and examine its application in various levels of education and other subject areas. Teacher competency development, digital infrastructure provision, and adaptive curriculum design are crucial factors in optimizing the benefits of blended learning in English language learning.

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