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Exploring the Relationship Between Learner Engagement and Language Achievement in Blended Learning Context

Jianjuan Li

Department of Foreign Languages

Shandong University of Finance and Economics

No. 7366, Erhuan East Road, Jinan, Shandong Province, China

E-mail: lijianjuan@graduate.utm.my

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Abstract

Engagement has been considered as an important construct which influences learner's language learning. This study aims to assess EFL learners' engagement level in the blended learning context and then to explore its relationship with language achievement. A quantitative research design was adopted with a survey approach. A total of 209 questionnaires were collected. Learners' language achievement was measured through their end-of-term exams. Descriptive statistics and correlation were conducted for data analysis. The findings revealed that EFL learners' total engagement level was high in the blended learning, and there was a significant positive correlation between learner engagement level and their language achievement. Moreover, learners' behavioral engagement, cognitive engagement and emotional engagement were also found to be correlated with their language achievement. These findings not only provide empirical evidence on the pivotal role of learner engagement in language learning, but also have much implications for language teaching in blended context.

Keywords: learner engagement, language achievement, blended learning

1. Introduction

The Chinese Ministry of Education (MOE) has advocated that tertiary students should actively involve in their learning, which stresses on learner engagement—the active participation or commitment of learners to the learning process. Learner engagement has

been a hot topic in educational psychology for decades (Fredricks et al., 2004; Ainley, Patt, & Hansen, 2006; Skinner & Pitzer, 2012). The widely accepted conceptualization of engagement is defined as a meta construct consisting of three dimensions of behavior, cognition and emotion (Fredricks, 2004). Engagement could reliably predict learners' achievement (Jang et al., 2012; Jang, Reeve, Ryan, & A. Kim, 2009), which was considered as the major force of learning (Ellis, 2019). Previous studies have found that higher levels of learner engagement have been linked to many desirable educational outcomes such as academic achievement, confidence, motivation, inquiry and goal-oriented abilities (Christenson et al., 2012; Phan et al., 2016; Baranova et al., 2022). It is also suggested that engagement can be improved through intentional interference and teaching practices (Harbour et al., 2015).

Language learning research has begun to build on a considerable body of work in the learning sciences and educational psychology (Fredricks et al., 2019), extending studies on learner engagement in domain-specific ways (Hiver, Al-Hoorie & Mercer, 2021b). It is proposed that active engagement was key concern for all instructed language learning (Dörnyei & Kormos, 2000). Learners' active devotion and immersion is very important for successful foreign language learning which is considered as a long and arduous process (Sang & Hiver, 2021). English is placed great emphasis in the Chinese educational setting and the teaching objectives of higher education include developing students with a strong command of English. However, it has been found that a large number of EFL students in Chinese institutions, especially in local provincial universities, do not engage themselves in English learning as a result of lack of motivation (Liu, 2014). Hence it has become increasingly important for English teachers and educators to evaluate learners' engagement level and provide interventions to sustain them engaged in language learning.

In the age of web 2.0 education has been profoundly revolutionized by technology. The introduction and application of information and communication technologies has made the learning process into a blended mode which integrated traditional classroom learning and technology-mediated learning (Graham, 2006). It is assumed this mode might improve the educational process, students' engagement and their learning outcomes, as well as stimulate students in professional knowledge and skills for their future development (Marsh, 2012; Zhang & Zhu, 2018; Banditvilai, 2016). In second language acquisition, research on blended learning has been focused on benefits of blended learning (Riel, Lawless & Brown, 2016; Zhang & Zhu, 2018; Graham, 2016), ways and methods of course design (Graham, Allen & Ure, 2003, 2005; Neumeier, 2005), and effects on developing language skills (Adas & Bakir, 2013; Tosun, 2015; Fatemipour, 2017). Although previous studies have found blended learning promotes learner motivation and engagement (Yoon & Lee, 2010; Marsh, 2012; Liu, 2013), there is lack of research on measuring learner engagement level in blended learning and its relationship with language achievement. On one hand, the construct of engagement in language learning is a relatively recent research foci and its definition and theoretical framework is lack of consistency and clarity (Hiver et al., 2021a). On the other hand, the mode of blended learning is malleable with different teaching design, which causes difficulties for measurement.

Since China's English education system was reformed, technology has been heavily encouraged and used more frequently. The measurement of learner engagement level in technology-mediated language learning is rarely investigated, although it is widely recognized that engagement is decisive for effective learning (Mercer, 2019; Hiver et al., 2021a). This study was conducted to ascertain the level of student engagement through the implementation of a blended teaching mode, based on Fredricks et al. (2004) tripartite definition of engagement — behavioral engagement, cognitive engagement and emotional engagement. The study also explored the relationship between learner engagement level and their language achievement. The findings not only reflected the status quo of tertiary learners' engagement in learning English as a foreign language in China, but also shed lights on methods of improving learner engagement. The following questions will be addressed:

(1) What is the level of learner engagement in terms of behavior, cognition and emotion in the blended learning context?

(2) What is the relationship between learners' engagement level and their language achievement?

2. Literature Review

2.1 Conceptualization of Learner Engagement

Alexander Astin (1984) was the first to propose the engagement hypothesis, which defined engagement as the amount of mental and physical energy students invest in their academic experience. According to this view, a good student is actually the one who exhibits greater involvement, and greater engagement results in greater learning (Astin, 1984). Additionally, active engagement in the learning process is emphasized by this paradigm (Astin, 1984). Given the breadth of the investigation, engagement was found to be a multidimensional construct. As is proposed by Fredricks et al. (2004), engagement consists of at least three dimensions which are behavioral, cognitive, and emotional. Combining the advancement of theories in second language acquisition and characteristics of EFL learning, the dimensions of engagement are defined in the following. Behavioral engagement refers to the action and participation students take in academic work, amount of time they spent learning the target language, and their participation in extracurricular activities. Cognitive engagement is concerned with self-regulated learning, strategies employed by the students, and their investment in learning. Emotional engagement means students' emotions and attitudes towards teachers, classmates, and school, as well as a sense of belonging at school.

Engagement is such a complex construct that it possesses some unique characteristics. Learners must actively involve in the learning process and the defining characteristic of learner engagement is action (Mercer, 2019). Engagement is also contextually dependent. A learner's engagement is an interactive complexity of layers such as cultures, communities, families, schools, peers, classrooms and specific tasks and activities within classrooms (Finn & Zimmer, 2012; Pianta et al., 2012; Shernoff, 2013). Therefore, the concept must be interpreted with situated characteristics. In addition, engagement is dynamic and malleable (Appleton et al., 2008). When measuring engagement level, it can be understood as a

continuum with full engagement and disengagement at two ends. This indicates that with appropriate interventions learner engagement can possibly be improved (Fredricks et al., 2004).

2.2 Language Achievement

Comparing with the terminology - language performance which emphasizes on the ability of using language in real situations, language achievement focuses on the measurable progress learners attained through instructions in educational settings. In the field of second language acquisition, language achievement has been extensively studied with many other variables such as motivation, learning strategies and teaching methods. Achievement is an indicator of learners' academic ability. In some studies, it has been specified and examined through achievement test results (Horwitz, 2001; Jin & Zhang, 2021; An et al., 2021), self-ratings (Charoento, 2017), or language course marks (Karabıyık, 2019). While learning is the process by which a person gains knowledge, achievement is described as an indicator of an individual's academic competence and is typically measured through marks on exams and standardized achievement tests (McLean, 2001). Despite this difference between the two academic outcomes, research has primarily concentrated on how engagement affects individual accomplishment rather than learning (Furrer & Skinner, 2003). In this research about learner engagement in EFL learning, language achievement is examined through final grades.

2.3 Blended Learning

Blended learning was defined as the combination of traditional face-to-face instruction with computer-assisted instruction (Bonk & Graham, 2012). Moreover, Graham (2006) identified several levels of blended learning: activity-level blending, course-level blending, program-level blending, and institutional-level blending. Each one of these levels uses a combination of traditional ways of teaching and online elements depending on the type of learning, whether it is an activity, course, program or institution (Graham, 2006). In the English language teaching context, many studies have found blended learning has a positive effect on learners' reading skills in comparison with traditional learning (Ghazizadeh & Fatemipour, 2017), be effective in improving learner writing performance (Grgurovic, 2011; Adas & Bakir, 2013) and speaking skills (Shih, 2010). Furthermore, with the significant role played by technology in education, many studies have reported that the use of educational technology has enhanced student engagement (Schindler et al., 2017). Blended learning in ESL/EFL is proved to be one way to enhance motivation, and language learning mediated through digital games, influenced student learning outcomes on different levels (Huang, et al., 2018).

However, other studies indicated that the use of blended learning does not always have a direct impact on language skills. For instance, Tosun (2015) investigated the effect of using a blended learning strategies did not have any positive effect on students' vocabulary knowledge. Some research pointed that blended classes might make engagement difficult for some students because they had to adapt to two modalities of learning (Baneljee, 2011; Meyer, 2014). A study done by Osman *et al.* (2014) showed that polytechnic behavioral engagement,

agentic engagement, cognitive engagement, and emotional engagement did not have significant relationships with student achievement. The above literature reflects that the effect of blended learning on learner engagement is inconsistency and its relationship with learning outcome needs more empirical evidence.

2.4 Previous Studies on the Relationship between Learner Engagement and Language Achievement

Student engagement has been studied extensively in educational psychology. However, in the field of EFL teaching and learning, it is a newly developed construct and gains popularity in recent years. The literature indicates that blended learning can facilitate student engagement through a personalized learning experience, which is created by a systematic design that enables optimal synergy between face-to-face and online learning (Manwaring et al., 2017; Taylor et al., 2018; Halverson & Graham, 2019). Previous studies have indicated that learner engagement is a key driver of online or blended learning and has a positive effect on academic persistence, completion and performance (Phan et al., 2016; Baranova et al., 2022). Positive correlations were found between engagement and learner achievement (Kuh, 2001). Attendance, in-class behaviors, thinking about course content and out of class behaviors were reported to be associated with learner achievements (Kelsen & Liang, 2012; Karabiyik, 2019). By portraying successful language learners' engagement in the learning process qualitatively, it is found engagement defines learners' language acquisition (Maru & Pajow, 2019).

Because engagement can occur in these and other settings, definitions and operationalizations of engagement are rich and varied (Reschly & Christenson, 2012). In task-based language learning, engagement is measured through learner interaction, involvement or participation in class and with outcomes related to language use and development (Philp & Duchesne, 2016). Additionally, because of the important role engagement appears to play in the student learning process across contexts and within numerous learning subdomains, the need for reliable, valid and domain-specific measures of student engagement is imperative (Anderson, 2017).

The aforementioned review indicates the growing recognition for the importance of engagement. Engagement is such a broad concept that it portrays a picture of how students feel, think, and behave in learning environments (Oga-Baldwin, 2019; Hiver at al., 2021b). Because engagement is a construct that is highly dependent on contexts (Mercer, 2019), learner engagement in BL environment is quite different from that in the classroom setting. With the complexity of the construct and the variety of learning contexts, learner engagement is an issue that has received very limited attention, and this is one of the compelling reasons for us to continue our investigation.

3. Research Design

In this study, the engagement survey scale was adopted to investigate EFL learners' engagement level in the blended context. Learners' language achievement is assessed through their end-of-term grades.

3.1 Settings and Participants

3.1.1 The Blended Learning Context

English is learned as a foreign language and has been placed great importance in education in China. College English teaching is an important part of tertiary education. College English is a compulsory basic course for non-English majors in the universities, which aims to cultivate students' comprehensive English competence and enable them to communicate effectively in English in their future work and life. This study involves undergraduate students from the university where the course of College English has taken a method of blended learning combining online learning and offline learning. For the online learning, a teaching platform is used by the teacher to share related learning materials, slides, mini-lectures for students to preview or review besides traditional classroom learning. The university uses *Rain Classroom*, a popular smart classroom solution which features instant interaction through smartphones such as submitting homework, sitting in a specified exam, and scanning learning slides. Social media has also been used by the teacher to keep communication with students such as releasing homework and learning notice. The online learning part usually takes place outside classroom. According to teacher's assignment, they attend to the learning activities with various frequency during the week. For the offline learning, lectures are conducted twice a week, in the traditional classroom equipped with multimedia facilitators such as computers, projectors, and internet access.

3.1.2 Participants

Participants are the students of the researcher for the purpose of convenience. They are sophomores who attended college English course in the blended learning in their third semester. They were around 20 years old, majoring in financial management, accounting, computer science and communication engineering. The majority of them have a history of English learning for about 10 years. In the first two semesters they also attended the general English course which aimed at cultivating their general English competence. Some of the participants have passed the College English Test Band 4 (CET 4), and they are going to take part in the College English Test Band 6 (CET 6) in the next semester. Those who didn't pass CET 4 will have to sit in the exam again next semester.

3.2 Instruments

3.2.1 Questionnaire

The survey-based method was utilized to measure learner's engagement level in EFL blended learning. Hiver et al. (2020) proposed an engagement questionnaire measuring learners' behavior, cognition and emotions in the general manner. Wang et al. (2016) proposed a 4-scale survey of students' math and science engagement and its psychometric properties. Halverson & Graham (2019) put forward an engagement questionnaire with paired items but they concluded that indicators of behavior, cognition and emotion are unique for face-to-face and online engagement. Li & Li (2021) has adapted an engagement questionnaire for measuring learners' engagement in the classroom learning. To our knowledge there is no existing scale for measuring learner engagement in blended language learning. The

questionnaire adopted in this research is adapted from previous questionnaires (Hiver et al., 2020; Wang et al., 2016; Halverson & Graham, 2019; Li & Li, 2021) and added new items in consideration of the characteristics of blended EFL learning in China.

The questionnaire consists of two parts. The first part is about participants demographic information such as gender, age and major. The second part are investigation items rated according to frequency on a five-Likert scale (from 1=strongly disagree, 2=disagree, 3=not agree or disagree, 4=agree, to 5=strongly agree). It is an investigation of learners' engagement at the course level. There are three dimensions in the second part of the questionnaire. It contains 20 items for measuring learner behavioral engagement, 23 items for cognitive engagement and 30 items for emotional engagement. Examples of each engagement dimension are shown in Table 1. Besides, to guarantee an accurate and quick understanding of the specific items, the questionnaire was prepared in Chinese which is the participants' mother tongue.

Table 1. Examples of Learner Engagement Scale

Dimensions	Examples
Behavioral Engagement	1. *I completed all the assignments on time.* 2. *I attended English classes.*
Cognitive Engagement	1. *I was attentive in English classes.* 2. *I tried to understand my mistakes in the English language classroom when I got something wrong.*
Affective Engagement	1. *I enjoyed English classes.* 2. *I felt anxious with English learning.*

3.2.2 Language Proficiency Test

Learners' language achievement was assessed through their end-of-term examination. The test consisted of two sections. Section 1 is multiple choice items including listening (25 items), cloze (10 blanks), and reading comprehension (3 passages). Section 2 is written parts including translation (from Chinese to English) and essay writing. The total score is 100. Speaking was not tested in this examination. Writing part requires the students to write a short essay with a given topic. Listening part is focusing on testing listening comprehension ability. Reading part is testing the reading comprehension ability. Translation part is consisting of sentence translation and these sentences are all from passages in the textbook. These testing items are closely related to learning content at class. The test score could reflect

how they have engaged in the learning process.

4. Data Collection and Data Analysis

The questionnaires were administered through online tools named *Wenjuanxing* at the end of the semester. A total of 212 questionnaires were collected, among which 208 were used while 4 were discarded because the answers were incomplete or careless. SPSS 22 was used to export descriptive statistics and internal reliability of the scale for each dimension of engagement. The mean, standard deviation, maximum, and minimum from the descriptive statistics which indicate the level of learner engagement was presented.

The Cronbach alpha values of behavioral engagement, cognitive engagement and emotional engagement were 0.955, 0.978 and 0.926 respectively, which were above the criteria suggested by Nunnally (1978) (as cited in Ogunkola and Archer-Bradshaw (2013)) who indicated that a cut off value of 0.7 is acceptable. Therefore, the instrument used in this survey was reliable. For each participant, the average of behavioral engagement, cognitive engagement and emotional engagement is calculated individually and then the total sum is aggregated. These data were prepared in excel and then exported to SPSS software for analysis.

5.Findings

5.1 Learner Engagement Level

Table 2. Descriptive Statistics of Engagement Level and Test Score

	n	Min.	Max.	M	SD
Score	208	14	92	68.46	11.39
Engagement Level	208	7.19	15	11.55	1.75

As is shown from Table 2, the data was collected from 208 participants. Their language achievement was indicated from the end-of-term exam scores, which ranged from the lowest 14 to the highest 92 out of a total of 100, with the mean score being 68.46 (SD = 11.39). Table 3 shows that learner engagement level is very high with an average of 11.55 (SD = 1.75). The figure reflects that learners were highly engaged in the blend learning.

Table 3 shows the level of sub-dimensions of learner engagement. Learners' behavioral engagement, cognitive engagement and emotional engagement were high with mean scores at 3.86 (SD = 0.71), 3.80 (SD = 0.75) and 3.88 (SD = 0.45) separately. In general, the level of each dimension of learner engagement was almost the same. But the minimum of cognitive engagement level, which is 1.74, is much lower than that of the other two dimensions.

Table 3 Descriptive Statistics of Dimensions of Learner Engagement Level

	n	Min.	Max.	M	SD
Behavioral Engagement	208	2.15	5.00	3.86	0.71
Cognitive Engagement	208	1.74	5.00	3.80	0.75
Emotional Engagement	208	2.80	5.00	3.88	0.45

5.2 The Relationship Between Learner Engagement Level and Language Achievement

Table 4 Correlation between Student Engagement Level and Language Proficiency Score

	Score	Engagement Level
Score	1	
Engagement Level	.181**	1

**. p< 0.01 (two tailed).

Table 4 indicates there was a statistically significant weak positive correlation (r=.181**, p< 0.01) between learner engagement level and language achievement among the participants, which means the higher learner engagement level leads to improvement of learners' language achievement. Therefore, it is concluded learner engagement in blended context has a positive influence on their language proficiency.

A scatter plot was created, as seen in Figure 1, to further illustrate this link visually. The scatter figure demonstrates that the language score and student engagement level had a strong positive link. There is evidence to suggest that there is a positive association between the two variables as the dot pattern slopes from lower left to upper right. It indicates that the coordinate points exhibit a noticeable pattern, suggesting a potential correlation between the two sets of data. It is also evident from the line of best fit, which slopes to the top right, that there are some connections between the two variables. The higher engagement level is associated with higher language achievement. The fact that the scatters tended to concentrate close to the identifying line suggests that the correlation was real and not the result of chance.

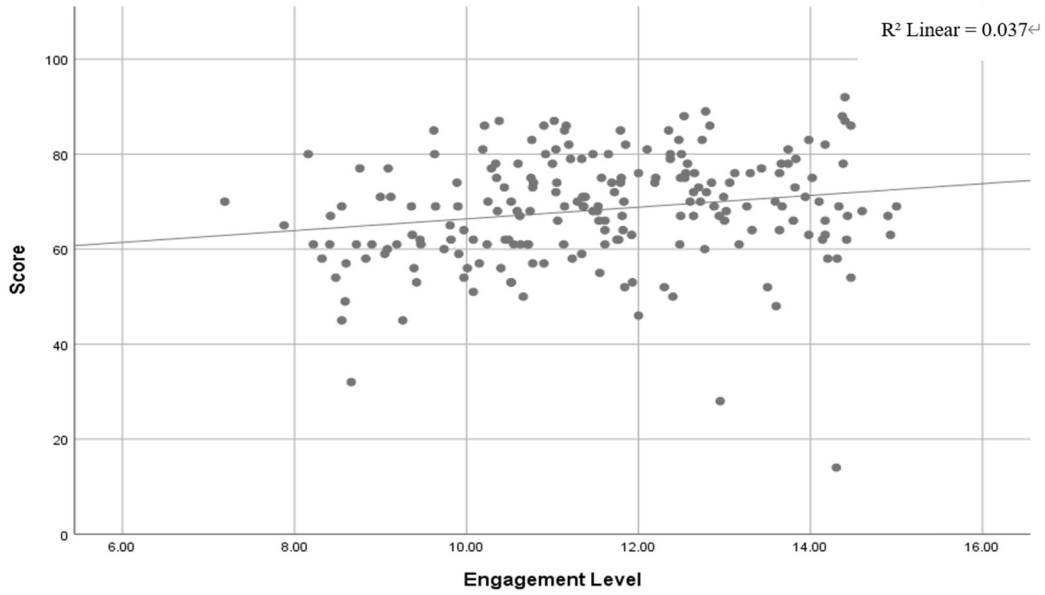

Figure 1. Scatter Plot Depicting the Relationship between Engagement Level and Language Proficiency Score

The correlation between sub-dimensions of learner engagement and language achievement was also investigated through the data analysis. The result is shown in Table 5. Learners' language achievement which was measured through the scores of the participants' end-of-term English exam, demonstrated a positive correlation with all dimensions of engagement, including behavioral engagement ($r=.159^{*}$, $p<.05$), cognitive engagement ($r= .141^{*}$, $p<.05$), and emotional engagement ($r= .147^{*}$, $p<.05$). However, the small R value indicates a low correlation (Eisinga et al., 2013).

Table 5. Correlation between Dimensions of Engagement and Language Proficiency Score

	Score	BE	CE	EE
Score	1			
BE	.159*	1		
CE	.141*	.703**	1	
EE	.147*	.681**	.589**	1

**. p< 0.01 (two tailed).

*. P<0.5 (two tailed).

Notes. BE: Behavioral Engagement; CE: Cognitive Engagement; EE: Emotional Engagement

6. Discussions

Firstly, the survey results from the current study showed a higher level of engagement, indicating that EFL learners were highly involved in the blended learning context. Various technologies have been adopted in language learning settings to facilitate students of different language proficiency and increase their engagement. Online teaching platforms, language learning APPs and MOOC provide learners with opportunities to engage in learning beyond the confinement of classrooms. The technology-enhanced learning mode creates authentic language environment for learners to practice. The participants who are referred as the millennial generation are considered to be digital native, and they are adept at using various online tools to facilitate their learning. Blended learning can also be challenging in how to integrate both modes of learning, and design teaching to effectively deliver content and motivate learners (Bond & Graham, 2012; Albiladi & Alshareef, 2019). To some extent learners' engagement level is the benchmark of the effective blended learning approach.

Moreover, engagement is a predictor of learners' language achievement. Data revealed that there was a positive correlation between learner engagement and their language achievement. This finding is in consistent with previous studies that student engagement has a significant impact on students' motivation and academic achievement (Fredricks et al., 2016; Khajavy, 2021; Wong et al., 2024). This also reveals that engagement as a meta-construct defines learning and plays a pivotal role for successful language learning (Mercer, 2019; Hiver at al., 2021). Engagement is defined by its fundamental nature of action (Lawson & Lawson, 2013; Mercer, 2019). Theories of second language acquisition have stressed on the importance of meaningful use of language. Therefore, active involvement in learning is the prerequisite for language achievement. However, the findings showed that the correlation index was significantly positive but weak. On one hand, learner engagement was measured through the survey scale which elicited much data but it was limited to the participants self-report. On the other hand, learners' language achievement is built on a long and arduous process of learning (Mercer, 2019). The influence of learner engagement on their language proficiency is dynamic and longitudinal.

In this research, learner engagement was operationalized into behavioral engagement, cognitive engagement and emotional engagement (Fredricks et al., 2004). All the three dimensions of learner engagement was found positively correlated with language achievement. But the correlation between each dimension of engagement and language achievement was very low. This reveals that foreign language learning requires learners to participate in the learning process from the behavioral, cognitive and emotional aspects. It is underscored that true engagement demands all three components (Mercer, 2019). Fake learning with only perfunctory behavior cannot help learners to make progress. These three dimensions work together and create a synergy of influence on learner performance. Language learning is a complex system, and deep processing of cognition and positive emotions are conducive to promoting foreign language learning.

Finally, with the importance of engagement for language learning, there are much pedagogical implications. Information and communication technology has been applied into

foreign language teaching on a large scale. In order to establish a positive language learning environment that stimulates and sustains students' interest and engagement, teachers must select the appropriate technological resources. Engagement is dynamic and malleable with learning contexts (Fredricks et al., 2004; Mercer, 2019). Instructors should take measures to sustain and maintain learner engagement to a certain level in order to promote their language proficiency.

6. Conclusions

This empirical study proved that blended learning improved learners' engagement level which was associated with their language achievement. To achieve better language proficiency, learners should be engaged in learning with active behavior, cognitive efforts and positive emotions. The recognition of the importance of engagement in language learning also points to the fact that teacher should take appropriate measures to intervene and promote leaner engagement. Blended learning with a proper teaching design creates the conditions necessary for learning to occur by engaging and involving EFL learners to participate in activities. Future studies could focus on investigating specific factors and conditions that engage or disengage learners in the language learning process.

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Informed Consent

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Provenance and Peer Review

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Data Availability Statement

The data that support the findings of this study are available on request.

Competing Interests Statement

The authors declare that there are no competing or potential conflicts of interest.

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