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Evaluating the Effectiveness of Blended Learning in an EFL Undergraduate Classroom

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ABSTRACT

With the rapid advancement of technology and the need for flexible learning solutions, educational institutions are integrating more and more digital components into their curricula. Blended learning (BL) has emerged as a promising approach, combining the strengths of traditional classroom instruction with the advantages of online learning. This mixed-methods study investigates the effectiveness of BL in an EFL undergraduate course on students' English proficiency and through their attitudes. In the second semester of the academic year 2022, 269 students at a university in the west of Thailand participated in BL for a course named *Basic English I*. Data were collected via online pre-and post-tests, questionnaires, and semi-structured interviews. Of the 269 participants, 194 students from 13 majors completed the pre-and post-tests and questionnaires, and 20 volunteers were interviewed for in-depth information. The paired samples *t*-test and Cohen's *d* indicated significant improvement in students' English proficiency post-intervention, demonstrating the effectiveness of BL. The questionnaire analysis also revealed positive

attitudes towards BL, while a thematic analysis of the interviews highlighted BL's flexibility, accessibility, and ability to enhance engagement and understanding. Participants suggested improvements to the instructional methods and technical support as well, in order to further enhance the learning experience.

Keywords: blended learning, English as a Foreign Language (EFL) undergraduate students, effectiveness, student attitudes, education

Introduction

English is one of the most widely spoken languages globally, with approximately 20% of the world's population, or 1.5 billion people, speaking it (Szmigiera, 2022). Consequently, the teaching and learning of English have become increasingly important in second and foreign language classrooms worldwide. Since the 19th century, language teaching methods and approaches have evolved continuously, striving for more effective methods (Carina, 2019). Traditional face-to-face learning, involving direct interaction between teachers and students, has been the most common form of instruction for decades (Shah, 2022). However, it has its limitations, such as restrictive learning materials and the need for specific times and physical location for teaching and learning (Gherheș et al., 2021).

With the rapid technological advancements of the 21st century, the nature of learning has now been dramatically altered. Literacy and the ability to self-teach have become essential skills (Stauffer, 2022). Since the early 2000s, online learning has transformed education by integrating with traditional methods, offering flexibility and accessibility (Dhawan, 2020). The COVID-19 pandemic further accelerated the adoption of online teaching, highlighting a growing reliance on technology in education and underscoring the importance of blended learning (BL) as a sustainable approach in an educational landscape (Bates, 2020).

Blended learning (BL) combines the strengths of online and face-to-face learning, offering a flexible and comprehensive approach that can address many challenges posed by purely traditional or online methods. Studies in Thailand, such as those by Wichadee (2018) and Chayanuvat (2021), have demonstrated that BL can enhance instructional outcomes, knowledge acquisition, and skill development. However, while these studies highlight the benefits of BL, they do not fully address the specific challenges

faced by Thai EFL students, particularly in the context of improving their English proficiency and shaping positive attitudes toward this learning approach.

This research gap is significant, especially in the post-pandemic era, where there is an increasing need to adapt educational strategies to the evolving technological landscape. Currently, the existing literature lacks a comprehensive examination of how BL impacts both language proficiency and student attitudes, particularly within the Thai EFL context. Moreover, there are inconsistencies in the findings of previous studies regarding the effectiveness of BL, with some research suggesting its benefits while others indicate potential drawbacks, especially when students and teachers face challenges such as technical issues, class management difficulties, and lack of interactions in online learning environments (Watanapokakul, 2022).

In 2020, a university in the west of Thailand introduced EFL blended learning courses for undergraduates in order to address their issues of having limited interaction with native speakers and insufficient cultural immersion. By incorporating technology, the university aimed to implement BL in a foundational English course. However, such transition faced challenges due to students' unfamiliarity with online learning, stemming from their traditional schooling backgrounds. This situation highlighted the need to adapt teaching strategies to better align with students' attitudes toward BL, which is crucial for improving their academic performance. Consequently, BL was implemented to effectively address these challenges and enhance educational outcomes.

This study aims to investigate the effectiveness of a blended learning course among EFL undergraduate students, specifically focusing on two aspects: improvements in students' English proficiency and their attitudes toward blended learning. The research questions are as follows: 1) To what extent can blended learning increase English proficiency among EFL undergraduates? and 2) What are the students' attitudes toward blended learning? Correspondingly, two hypotheses were formulated: 1) The post-test mean score of the EFL undergraduate students will be significantly higher than their pre-test mean score, and 2) The EFL undergraduate students will have positive attitudes toward BL.

By addressing these research questions and hypotheses, this study aims to fill the identified gaps in the literature, contributing valuable insights into the effectiveness of BL in the Thai EFL context. The findings will not only inform local educational practices but also have broader implications for EFL education internationally, particularly in regions facing similar challenges in the integration of technology and traditional teaching methods.

Literature Review

Blended Learning

Blended learning (BL), also known as hybrid learning, is a learning strategy that integrates both face-to-face and online learning environments to enhance and support student learning (Yousef et al., 2015). The concept of BL was first introduced by Clayton Christensen and his colleagues, who explored how combining these two modes of instruction could revolutionize educational practices by providing greater flexibility and accessibility for students (Christensen et al., 2013). Poon (2014) further defined BL as the strategic combination of traditional face-to-face instruction with online learning activities to; create a cohesive and complementary learning experience. Allen et al. (2007) classified blended learning as a system where 30% to 70% of the learning materials are delivered online, with the remaining activities conducted face-to-face. A classification of the proportion of online learning material is depicted in Table 1.

Table 1

Classification of the Proportion of Online Learning Material (Allen et al., 2007, p. 5)

Proportion of Content Delivered Online	Type of Course	Typical Description
0%	Traditional	Material is delivered in writing or orally with no online technology used.
1 to 29%	Web facilitated	Website is used for posting syllabus, assignment, etc.
30 to 79%	Blended / Hybrid	Combination of face to face and online learning. The delivery of material and discussion can be done online. But, in some proportion face to face learning is also conducted.
80+%	Online	Almost all aspects of learning done online with no face-to-face learning.

Various models of BL include the face-to-face driver, online driver, rotation, flex, flipped classroom, and self-blended models (Kolinski, 2022). Each model offers flexibility and can be adapted to different learning activities. For example, the flipped classroom model would have students engage with online materials before class, enabling interactive activities during class time. BL provides benefits such as flexibility, unlimited access to materials, time efficiency, and improved teacher-student communication (Szadziewska & Kujawski, 2017). However, it also faces challenges such as a lack of motivation among students, technical issues, and a heavy cognitive load (Ahmed, 2022). Understanding these factors is, thus, crucial for effective implementation. Among these challenges, students' attitudes towards BL also play an important role in determining the success or failure of its implementation. Positive attitudes can enhance engagement and learning outcomes, while negative attitudes can hinder the effectiveness of BL. Therefore, exploring students' attitudes towards BL is essential to maximizing its potential benefits in educational settings.

Attitudes towards BL in English Language Learning

Attitudes are one of the most critical factors in language learning and can significantly influence a student's success or failure. According to Dörnyei (2003), students' motivation and attitudes are key determinants of their second/foreign language learning achievement. Csizér et al. (2010) noted that a positive attitude can enhance a learner's motivation. Additionally, students' attitudes towards the target language and learning environment also play a crucial role in their language-learning success (Candlin & Mercer, 2001). Meng (2010) explained that a positive attitude helps students overcome difficulties, build confidence, and maintain determination, while negative attitudes lead to depression, complaints, and restricted potential. Similarly, Sengkey and Galag (2018) indicated that negative attitudes can adversely impact language learning. Though, Choy and Troudi (2006) proposed that negative attitudes can be mitigated by improving the learning methods, classroom environment, and social environment. In summary, fostering a positive attitude in students is essential in enhancing their language-learning success.

Relevant Studies: Implementations of BL

In recent years, BL has emerged as a transformative approach in education, combining traditional and online learning experiences. Research suggests that BL enhances student engagement by offering flexibility and personalized learning opportunities. Numerous studies across various

geographical contexts have also demonstrated its effectiveness through improved student outcomes. For instance, Zhang and Zhu (2018) observed improved learning outcomes among ESL students in Beijing, and Alrouji (2020) found that BL significantly enhanced the paragraph writing skills of EFL students at Shaqra University. Syakur et al. (2020) noted improvements in students' subject knowledge and English-reading abilities, indicating the positive impact of BL on students' academic performance. However, the literature also presents mixed findings. For example, Güzer and Caner (2014) found no significant difference in students' achievements between BL and traditional face-to-face learning, and Owston et al. (2013) reported higher student satisfaction with in-class tutorials and online lectures compared to BL, highlighting the variability in BL's effectiveness across different contexts.

In addition to improving students' academic performance, student attitudes towards BL have also been widely investigated, with findings generally indicating a positive reception. Aladwan et al. (2018) reported that Jordanian students appreciated the blended approach, emphasizing its role in enhancing knowledge and skills. Similarly, studies by Wichadee (2018) and Akbarov et al. (2018) reinforced this positive reception, with students expressing satisfaction with BL environments and often preferring them over traditional classrooms. Despite the overall positive outlook, the effectiveness of BL may vary based on contextual factors, such as the specific educational setting, the design of the blended course, and the students' familiarity with online learning.

Given the mixed results in the literature and the importance of contextual adaptation, there is a clear gap in understanding how BL impacts both English proficiency and student attitudes in specific settings. Therefore, this study aims to help fill that gap by investigating both students' English proficiency and attitudes, and in turn, evaluating BL's effectiveness in an EFL course at a university in the west of Thailand.

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Research Methodology

Research Design

This study was based on a one-group pretest-posttest experimental mixed-methods design (Creswell & Plano Clark, 2017), integrating both quantitative and qualitative data to provide a comprehensive analysis of BL's effectiveness through students' improvements in English proficiency and attitudes in an EFL undergraduate course. Quantitative data were obtained via an English test and questionnaire, while qualitative data were collected through semi-structured interviews, providing detailed explanations to supplement the quantitative findings.

Participants

The study involved 269 undergraduate students enrolled in the Basic English I course during the second semester of the academic year 2022 at a university in the west of Thailand. These students represented a total of 13 different majors. All students were invited to participate in the pre- and post-tests, questionnaires, and semi-structured interviews. Of the 269 students, 194 (72.11%) completed the pre- and post-tests and questionnaires. For the semi-structured interviews, 20 volunteers were randomly selected from 43 initial volunteers to provide in-depth qualitative data, a number sufficient for data saturation as well.

Setting and the Course

The General Education Department of the university began offering blended learning courses in 2020 to address diverse English proficiency levels and learning speeds among students. The BL approach integrated face-to-face and online learning components to enhance student engagement and learning outcomes.

The *Basic English I* course covered various language skills such as listening, reading, speaking, writing, grammar, and vocabulary in daily use. The course was 15 weeks long, taught by eight lecturers using the same commercial textbook, materials, and lesson plans. The course content was divided into eight units, each focusing on real-life situations, and included both in-person classes and online self-study components. Students were required to participate in two hours of face-to-face classes and two hours of self-study on the online platform each week. Performance evaluation was based on unit activities (30%), assignments (20%), a mid-term examination (20%), a final examination (20%), and class attendance (10%).

Research Instruments

Three main instruments were used for data collection: an English test, a questionnaire, and semi-structured interview questions.

English Test

The English test was used to assess the effectiveness of BL by measuring students' English proficiency. It was designed based on the course content and elements from the online platform. Administered online via

Google Forms, the test included 50 multiple-choice questions divided into five sections: listening comprehension, vocabulary knowledge, speaking skills (assessed indirectly), grammar knowledge, and reading comprehension. The multiple-choice format was chosen for its efficiency in assessing a broad range of language skills, particularly receptive skills like listening and reading, within a standardized framework (Haladyna & Downing, 1989). This format ensures consistent scoring and objective evaluation, making it ideal for measuring core English skills, especially in an online setting (Brame & Biel, 2015). The test duration was one hour.

Questionnaire

The researcher adapted a questionnaire from the Comparative Learning Environment Questionnaire (Iyer, 2011) to assess EFL learners' attitudes towards BL, using Thai to avoid language barriers. This questionnaire was selected for its comprehensive coverage of factors influencing the learning environment, which is closely aligned with the research questions aimed at exploring students' attitudes and experiences with BL. It was administered online via Google Forms and consisted of three sections. The first section included seven closed-ended questions on participants' demographics, English skills, and technological backgrounds. The second section had eight five-point Likert scale questions on students' overall attitudes towards BL in the Basic English I course. The final section comprised 45 five-point Likert scale questions across nine sub-sections from Iyer (2011): task orientation, responsibility and independence, access, computer usage, authentic learning, information design and appeal, enjoyment, academic efficacy, and anxiety. The questionnaire took approximately 20-30 minutes to complete.

Semi-Structured Interview Questions

To collect qualitative data and gain in-depth insights into EFL learners' attitudes towards a BL course, semi-structured interviews were conducted with 20 randomly selected volunteer students. The interview questions were designed to be aligned with the questionnaire items, ensuring consistency between the quantitative and qualitative data. Fourteen open-ended questions were asked in Thai to ensure clarity and facilitate detailed responses (see Appendix). The interviews were also audio-recorded for accurate transcription and future analysis.

Research Instrument Validation

All instruments were validated by five EFL experts using the Item Objective Congruence Index (IOC). The IOC scores for the English test, questionnaire, and interview questions were .87, .93, and .96, respectively, indicating high validity (Rovinelli & Hambleton, 1977). Revisions were then made based on the experts' feedback. Afterwards, a pilot study with 30 students of similar background was conducted in November 2022 to assess the instruments' reliability and feasibility. From this, the internal consistencies of the English test and questionnaire, measured by Cronbach's alpha, were .88 and .99, respectively, showing high reliability (Cronbach, 1957).

Data Collection

Before conducting the study, the research proposal and instruments were approved by the University's Central Ethics Review Board (MU-CIRB 2022/318.1811). All participants, over 18 years old, were fully informed about the study and their right to withdraw at any time without consequences. Their data were also kept confidential and deleted after the research to protect their privacy.

Data collection started in December 2022 and lasted until April 2023. Participants were asked to complete an English pre-test at the start of the semester, followed by instructions on using the online platform. The BL course ran for 15 weeks, after which the English post-test and the questionnaire were administered. Individual interviews were also conducted with randomly selected volunteers at this time until data saturation was reached.

Data Analysis

The effectiveness of BL was assessed using data from the English test, the questionnaire, and semi-structured interview questions to address all of the research questions. First, quantitative data from the pre- and post-tests were analyzed using SPSS (Version 26), employing a paired samples *t*-test to compare mean differences. Additionally, Cohen's *d* was calculated to estimate the effect size of any statistically significant difference, offering insights into the strength of the relationship between variables. An interpretation of Cohen's *d* is presented in Table 2. To evaluate students' attitudes towards BL, the questionnaire data were analyzed using descriptive statistics, including means (M) and standard deviations (SD) for Likert-scale items. The interpretation of these data followed the intervals and descriptions provided by Pimentel (2010, p. 111), as shown in Table 3. Finally, qualitative data from the interviews were analyzed using thematic analysis, based on Braun and Clarke's (2006) method, to identify recurring themes and patterns.

Table 2

Cohen's d Interpretation (Cohen, 1988, p. 40)

Cohen's *d*	Interpretation
0.20 < 0.50	Small
0.50 < 0.80	Medium
0.80 or more	Large

Table 3

Five-point Likert Scale Interpretation (Pimentel, 2010, p. 111)

Scale	Description	Interval	Interpretation (Agreement with the statements)
5	Strongly Agree	4.20-5.00	Very High
4	Agree	3.40-4.19	High
3	Neutral	2.60-3.39	Average
2	Disagree	1.80-2.59	Low
1	Strongly Disagree	1.00-1.79	Very Low

Findings

The findings of this study are presented based on the two aforementioned hypotheses, supported by quantitative data obtained from the English test and questionnaire, along with qualitative data derived from semi-structured interviews.

Hypothesis 1: The post-test mean score of the EFL undergraduate students is higher than their pre-test mean score.

To evaluate the effectiveness of BL in the EFL undergraduate course, the English proficiency of students was assessed through a pre and post-test using a paired sample *t*-test to measure differences in mean scores. The results are shown in Table 4 below.

Table 4

Findings from Paired Samples t-Test and Cohen's d

	N	Min	Max	*M*	*SD*	*t*	*df*	*p* (1-tailed)	Cohen's *d*

Pretest	194	3	42	20.34	8.31	-15.50	193	.000	0.74
Posttest	194	9	45	26.62	8.66				

*$p < .001$

Table 4 indicates that the students' post-test mean score ($M = 26.62$, $SD = 8.66$) was indeed higher than their pre-test mean score ($M = 20.34$, $SD = 8.31$); $t(193) = 15.50$, $p < .001$. Therefore, the null hypothesis (H0) was rejected, and the alternative hypothesis (H1) was accepted. The significant improvement in the post-test scores demonstrates the effectiveness of BL, with a moderate to large effect size (Cohen's $d = 0.74$). This indicates a meaningful improvement in students' English proficiency after participating in the BL course.

Hypothesis 2: The EFL undergraduate students have positive attitudes towards BL.

To evaluate the effectiveness of BL, the findings from the students' attitudes, gathered through the questionnaires and semi-structured interviews, were reported using a weaving technique (Fetters & Freshwater, 2015). This approach involved presenting the quantitative data from the questionnaires followed by a presentation of the qualitative data from the semi-structured interviews.

Demographic Information

The first part contained seven closed-ended questions regarding participants' demographic information, including gender, online learning experience, frequency of previous online learning, and equipment used during online activities. The demographic information of the participants who completed the questionnaire is presented in Table 5 below.

Table 5

Demographic Information of Questionnaire Participants

Category	Sub-Category	Frequency	Percent
Gender	Male	58	30
	Female	136	70
Major	Public Health	33	17
	Social Studies	25	13
	Animal Science	24	12
	Thai Language	17	9
	General Management	16	8
	Marketing	16	8
	Art Education	15	8

Category	Sub-Category	Frequency	Percent
	Technology and Computer Innovations	11	6
	Food Processing Technology	10	5
	Thai Traditional Medicine	9	5
	Communication Arts and Media Innovations	9	5
	Computer Science	6	3
	Music Education	3	11
Online Learning Experience	Yes	183	94
	No	11	6
Previous experience of online learning frequency	Almost everyday	39	20
	2-3 times/week	34	17
	Once/week	34	17
	2-3 times/month	48	25
	Once/month	8	4
	Once/semester	15	8
	Never	16	9
Equipment frequently used during the online activities	PC/Laptop	44	22
	Tablet	17	9
	Mobile phone	133	69

N = 194

Table 5 illustrates the demographic information of the participants. Out of 194 respondents, 30% were male, and 70% were female. The participants all came from a variety of academic majors, with the largest groups being Public Health (17%), Social Studies (13%), and Animal Science (12%). Other represented majors included Thai Language (9%), General Management (8%), Marketing (8%), Art Education (8%), Technology and Computer Innovations (6%), Food Processing Technology (5%), Thai Traditional Medicine (5%), Communication Arts and Media Innovations (5%), Computer Science (3%), and Music Education (1%). A significant majority (94%) had prior online learning experience. The frequency of online learning varied, with 25% engaging a few times per month, 20% almost daily, and smaller percentages for other frequencies. Most students (69%) used mobile phones for online activities, followed by PCs/laptops (22%) and tablets (9%).

Following this, the demographic details of the volunteers who participated in the semi-interviews are provided in Table 6 below.

Table 6

Demographic Details of the Semi-structured Interview Participants

Participant	Gender	Major	Online Experience	Equipment frequently used	Previous experience of online learning frequency
Student 1	Female	Social Studies	Yes	Mobile	Almost everyday
Student 2	Female	Computer Science	No	PC/Laptop	Once a month
Student 3	Female	Thai Traditional Medicine	Yes	Tablet	Once a week
Student 4	Female	Art Education	Yes	Mobile	2-3 times/week
Student 5	Male	Technology & Computer Innovations	Yes	Mobile	2-3 times/week
Student 6	Female	Public Health	Yes	PC/Laptop	Almost everyday
Student 7	Male	Marketing	Yes	Tablet	2-3 times/week
Student 8	Female	Social Studies	Yes	Mobile	2-3 times/week
Student 9	Female	Thai Traditional Medicine	Yes	Mobile	Almost everyday
Student 10	Female	Public Health	Yes	PC/Laptop	Almost everyday
Student 11	Female	Public Health	Yes	Mobile	Once a week
Student 12	Female	Thai Traditional Medicine	Yes	Mobile	Almost everyday
Student 13	Male	Social Studies	Yes	Mobile	Once a week
Student 14	Female	Thai Traditional Medicine	Yes	Tablet	Once a week
Student 15	Female	Thai Traditional Medicine	Yes	Mobile	Once a week
Student 16	Female	Art Education	Yes	Mobile	2-3 times/week
Student 17	Female	Computer Science	Yes	Mobile	Once a week
Student 18	Male	Art Education	Yes	Mobile	2-3 times/week
Student 19	Male	Social Studies	Yes	PC/Laptop	Almost everyday

Participant	Gender	Major	Online Experience	Equipment frequently used	Previous experience of online learning frequency
Student 20	Female	Public Health	Yes	PC/Laptop	Once a week

Students' Attitudes towards Overall BL

The second part of the questionnaire aimed to assess the students' overall attitudes towards BL in *Basic English I*. The results obtained from the analysis of 194 student questionnaires are presented in Table 7 below.

Table 7

Students' Attitudes towards Overall BL

Items	*M*	*SD*	Interpretation (Agreement with the statements)
1. Blended learning is suitable for teaching English in this course.	3.8	0.8	High
2. Blended learning helps me learn English better.	3.8	0.9	High
3. Blended learning allows me to learn English as much as I want.	3.8	0.9	High
4. Blended learning in this course increases my interaction with my teacher.	3.7	0.9	High
5. Blended learning in this course increases my interaction with my classmates.	3.8	0.9	High
6. The blended learning process in this course is not complicated.	3.7	0.8	High
7. I want blended learning in other subjects.	3.7	0.8	High
8. Overall, I am satisfied with this blended learning course.	3.8	0.9	High
Total	**3.8**	**0.8**	**High**

According to the data presented in Table 7, the students reported that BL was suitable (M = 3.8), helped them learn English better (M = 3.8), and allowed them to learn English as much as they desired (M = 3.8). Here is an excerpt of one such student's feedback:

> I could learn independently and better understand the topic because online lessons and activities provided answers and

> explanations. My teacher was also on hand to answer questions and provide additional information. (Student 5)

BL also increased students' interaction with both their teachers (*M* = 3.7) and their classmates (*M* = 3.8). Some students (15%) also noted in the interviews that social interaction with peers and teachers, both online and in the classroom, were seen as beneficial for understanding the material. The following is an excerpt of a student's comment expressing such sentiments:

> BL helped me understand the topics better because I could ask the teacher and had friends help me study in the classroom. In terms of online learning, I could review the missed material. (Student 20)

Moreover, the students thought the BL process in this course was not complicated (M = 3.7). However, the interview findings did indicate varied opinions. While many students found the platform easy to use, especially after becoming familiar with it, some encountered challenges related to technical issues, system crashes, and microphone usage.

> The platform is easy to use and uncomplicated, and the teacher has introduced the online platform prior to learning. (Student 2)

> The online functions could be more convenient, especially in the speaking part. Sometimes the microphone cannot be used, and there are concerns with system stability. (Student 7)

Additionally, the students expressed a desire for BL in other subjects (M = 3.7). During the interviews, most students (85%) showed interest in this idea, mentioning the value of using online learning activities for reviewing content before exams and reinforcing their learning.

> It's also good to use this learning in other subjects because some subjects have a lot of complicated content. Studying this way will make it easier to review the content of that subject. (Student 7)

In the interviews, the students also brought up areas for improvement, including incorporating diverse teaching methods, more speaking practice, addressing technical issues, and adding more engaging activities.

> I want teachers to make learning more enjoyable by incorporating more engaging activities, and I prefer teaching to be slower. (Student 8)

> The system's stability should be upgraded to support online learning activities because there were regular crashes. The content should provide more grammar content because the content is more challenging than the other topics. (Student 13)

In conclusion, the research findings revealed students' positive attitudes towards BL at a high level (M = 3.8). They found BL beneficial and effective for improving their English proficiency, citing flexibility, resource accessibility, and increased interaction with peers and teachers as key factors enhancing comprehension. However, opinions on platform ease varied due to technical challenges. Notably, students expressed interest in extending BL to other subjects and provided valuable feedback for improvements.

Students' Attitudes towards BL in Nine Categories

The last part of the questionnaire assessed the EFL undergraduate students' attitudes towards BL, including both face-to-face and online activities. These activities were categorized into nine sub-sections (Iyer, 2011) namely: 1) task orientation, 2) responsibility and independence, 3) access, 4) computer usage, 5) authentic learning, 6) information design and appeal, 7) enjoyment, 8) academic efficacy, and 9) anxiety. The students' attitudes towards BL in each category are presented in Table 8 below.

Table 8

Students' Attitudes towards BL in Nine Categories

Items	Face-to-Face Activities			Online Activities		
	M	***SD***	**Interpretation** (Agreement with the statements)	***M***	***SD***	**Interpretation** (Agreement with the statements)
1. Task orientation	3.8	0.8	High	3.8	0.8	High
2. Responsibility and independence	3.8	0.8	High	3.8	0.7	High
3. Access	3.7	0.8	High	3.8	0.8	High
4. Computer usage	3.8	0.9	High	3.9	0.8	High
5. Authentic learning	3.7	0.9	High	3.7	0.8	High
6. Information design and appeal	3.8	0.8	High	3.8	0.8	High
7. Enjoyment	3.8	0.8	High	3.7	0.8	High
8. Academic efficacy	3.3	1.0	Average	3.3	1.0	Average
9. Anxiety	3.4	1.0	High	3.4	1.0	High

Items	Face-to-Face Activities			Online Activities		
	M	***SD***	**Interpretation** (Agreement with the statements)	***M***	***SD***	**Interpretation** (Agreement with the statements)
Total	**3.8**	**0.8**	**High**	**3.8**	**0.8**	**High**

The findings for each category are woven with direct quotes from the semi-structured interviews to provide a comprehensive understanding of their attitudes as follows:

Task Orientation

The students demonstrated high levels of agreement (M = 3.8) in both face-to-face and online activities, emphasizing the importance of task completion and understanding course goals. They highlighted their awareness of the workload and their engagement in comprehending the course objectives across both learning modes. Here are some relevant responses from the students' interviews:

> Knowing each activity and assignment was very effective and important because it helped me plan my learning and determine what needed to be done (Student 11).

> Understanding the activity goals and completing assignments both online and in-class made me see English as something very necessary that made me try harder (Student 8).

This illustrates the positive impact of the clearly defined tasks and objectives on students' learning experiences.

Responsibility and Independence

The students reported high levels of responsibility and independence (M = 3.8) in both settings. They felt they played a crucial role in their learning, were encouraged to take control, and had opportunities to make decisions about their learning processes. As one student mentioned:

> With BL I was in charge of my learning since I could study whenever I chose without having to wait for others. I was able to learn at my own pace (Student 13).

Another student also noted this sentiment, saying:

> BL allows me to take control of my own learning because classroom activities and online activities have different advantages (Student 2).

These responses highlight the flexibility and autonomy provided by BL, fostering a student-centered learning environment.

Access

The students rated their ability to access learning activities and work at their own pace highly (M = 3.7-3.8). They appreciated the flexibility of online activities, which allowed them to study at convenient times and review materials at their own pace. One student shared:

> BL was easy for me to do both in-class and online activities. Face-to-face activities were better in terms of content because I could meet my teacher and ask questions directly. For online activities I could review materials in a variety of ways (Student 4).

This underscores the advantages of having multiple access points to learning materials, enhancing overall student satisfaction and performance.

Computer Usage

High levels of agreement (M = 3.8-3.9) were observed regarding the use of computers for assignments, information retrieval, and communication. The students indicated that BL improved their technological skills and allowed them to utilize various digital tools effectively. One student explained:

> I used to spend most of my time on social media and games but after studying in this format I was able to use various forms of technology for learning doing and even submitting my assignments especially in online activities (Student 16).

This highlights the role of BL in enhancing students' digital literacy and comfort through the use of technology for academic purposes.

Authentic Learning

The students expressed high levels of agreement (M = 3.7) in being able to relate their learning to real-life situations and apply everyday

experiences to their studies. Online activities were particularly noted for providing students with opportunities to study real cases and work on practical assignments. One student remarked:

> I adapted what I've learned in this course to my life outside of the classroom since I worked part-time in a restaurant and could use what I've learned to communicate with foreign clients (Student 10).

This demonstrates the practical application of academic knowledge as facilitated by BL.

Information Design and Appeal

The students rated the information design and appeal of materials highly (M = 3.8) in both face-to-face and online activities. They found the design clear, visually appealing, and helpful in understanding the content. The following excerpts showcase a few examples supporting these findings from the students' interviews:

> The textbook and presentation in classroom were both clear and easy to understand. The website's design was also simple and straightforward (Student 5).

> Both in class and online visuals and videos made learning fun and easy to understand. I could watch listen and replicate the actions which really helped me understand the lessons (Student 8).

These comments reflect the importance of well-designed educational materials in enhancing learning experiences.

Enjoyment

High levels of enjoyment (M = 3.7-3.8) were reported in both face-to-face and online activities. The students found the lessons interesting and looked forward to studying the subject. The following are excerpts of such opinions from the interviewees:

> I prefer learning in the classroom because it allows me to ask questions. I had the opportunity to practice the language and learn more about it. It was fun to interact with my classmates (Student 4).

> BL has engaged my desire to learn more. Studying face-to-face was enjoyable because I could meet my friends and collaborate with them directly (Student 15).

These responses indicate that both learning modes were effective in maintaining student interest and engagement.

Academic Efficacy

The students rated their academic efficacy at an average level (M = 3.3). They found it relatively easy to get good grades, but felt the subject's difficulty was moderate. Some students highlighted improvements in their grades and English abilities, attributing this to the comprehensive nature of BL. One student mentioned:

> In this subject I improved my grade from C+ to B+. The activities both in class and online allowed me to learn more in all areas (Student 18).

This suggests that BL can be effective in supporting students in their academic achievement.

Anxiety

The students exhibited high levels of anxiety (M = 3.4) in various aspects of their learning, such as task completion, grammar lessons, and test-taking. One student shared:

> Due to my low self-confidence in my English skills I was worried when I had to finish assignments both in-class and online. I was also nervous when my teacher asked questions in English because I felt pressured when I couldn't understand them (Student 17).

This indicates that while BL offers many benefits, it also presents challenges that need to be addressed to ensure that all students feel supported and confident in their learning.

Overall, the findings indicate that the students hold positive attitudes towards BL across most sub-categories, with high levels of engagement, responsibility, access, and enjoyment. However, academic efficacy and anxiety levels suggest areas where additional support might be needed to enhance learning experiences and outcomes in BL settings. The integration

of student quotes provides a well-rounded understanding of their attitudes and experiences, underscoring the importance of addressing individual needs and preferences in BL environments.

Discussion

Based on the findings, the discussion is divided into two parts: the improvements in students' English proficiency and students' attitudes towards Blended Learning (BL).

The Improvements in Students' English Proficiency

The findings of this study reveal that the implementation of BL in an EFL undergraduate course significantly improved students' English proficiency, as evidenced by the notable increase in the post-test scores (M = 26.62, SD = 8.66). This improvement is consistent with previous research, such as in the study by Zhang and Zhu (2018), who demonstrated enhanced performance among Chinese undergraduate students in BL environments, and Alrouji (2020), who found that BL improved English paragraph writing skills among EFL students at Shaqra University.

Critically examining these studies reveals several common factors contributing to the effectiveness of BL. All three studies highlight the role of BL in providing a more flexible and interactive learning environment, which supports a range of learning styles and needs. The consistent finding across these studies is that BL enables students to engage with the learning material both in and outside the classroom, offering opportunities for repetition and deeper understanding, which are critical in language acquisition.

Furthermore, these studies are aligned in their emphasis on the importance of the strategic integration of technology with traditional teaching methods. Zhang and Zhu (2018) and Alrouji (2020) both suggest that the combination of online and face-to-face components allows students to benefit from immediate feedback and peer interaction, while also enabling self-paced learning through digital resources. This hybrid approach appears to be particularly effective in enhancing language skills, as it caters to both collaborative and independent learning processes.

However, despite these commonalities, there are also distinctions in the scope and focus of these studies. While Zhang and Zhu (2018) focused on general performance improvements in a broad EFL context, Alrouji (2020) specifically targeted the enhancement of paragraph writing skills. This suggests that while BL can be broadly effective, its impact may vary

depending on the specific language skills being targeted. The current study contributes to this body of knowledge by demonstrating that BL can significantly improve student overall English proficiency, suggesting that the benefits of BL are not limited to specific skills but can extend to a comprehensive enhancement of language abilities.

In conclusion, while the findings of this study are aligned with previous research in demonstrating the effectiveness of BL in improving language proficiency, they also underscore the importance of tailoring BL strategies to target specific language skills and meet diverse learner needs. This critical alignment with past studies reinforces the value of BL as a versatile and effective approach in EFL education.

Students' Attitudes towards Blended Learning (BL)

Drawn from the findings of this study, the discussion on EFL undergraduate students' attitudes towards BL can be divided into two main parts: the overall BL experience and the two main elements of BL, namely face-to-face activities and online activities.

The Overall BL Experience

This study aimed to investigate the effectiveness of BL in an EFL setting based on students' attitudes towards this learning approach. The research findings indicate that EFL undergraduate students held a high level of agreement on the statements regarding the overall BL experience, demonstrating a generally positive attitude towards BL. This positive attitude is consistent with the findings by Akbarov et al. (2018), who found that Kazakhstani EFL students preferred BL due to its flexibility and effectiveness in enhancing English proficiency. Similarly, Rasheed et al. (2020) emphasized that BL's adaptability to individual learning needs and its support for learner autonomy are key factors contributing to positive student attitudes.

The alignment across these studies is evident in BL's ability to cater to diverse learning preferences by combining the strengths of both traditional and digital learning environments. In all of the studies, including the current one, students recognized BL as an effective method for improving their language skills, appreciating the mix of structured face-to-face interactions and the flexibility of online learning. This dual approach supports various learning styles and allows students to engage with the material at their own pace.

Moreover, these studies share common findings regarding the importance of teacher and peer support in the success of BL. In this study, as well as in the study by Balakrishnan et al. (2021), it was observed that while

BL promotes independence, students often rely on instructors and peers to navigate challenges, especially in online components. This suggests that effective BL requires a well-established support system, emphasizing the need for guidance in both face-to-face and online settings.

Another similarity is the emphasis on increased interaction within the BL framework. Both this study and the findings of Sari and Hermawan (2022) highlight how BL fosters communication and collaboration among students and teachers, enriching the overall learning experience. However, despite these benefits, students in this study, like those in Yin and Yuan (2021), pointed out areas for improvement, such as the need for more diverse teaching methods, additional speaking opportunities, and the resolution of technical issues.

In summary, the alignment across these studies illustrates that BL is perceived positively by students, primarily due to its flexibility, and support for autonomy and increased interaction. However, the findings also reveal shared challenges, such as the need for ongoing support and the importance of refining BL strategies to address technical and pedagogical gaps. This underscores the necessity of a balanced and well-structured BL environment that can adapt to the evolving needs of students while mitigating potential drawbacks.

The Two Main Elements of BL

BL incorporates two main elements: face-to-face activities and online activities. The findings from the questionnaire and interviews were divided into nine sub-sections as below:

Task Orientation. The students emphasized the importance of task completion and awareness of workload at high levels, demonstrating strong commitment in both settings. This is aligned with the findings of Vaughan (2014), who noted high levels of dedication in BL settings, suggesting that the BL format fosters responsibility and commitment. Additionally, students also showed a clear understanding of the workload, particularly for online activities, which is supported by Kintu et al. (2017), who found that students in BL settings often have better awareness and management of their workload.

Responsibility and Independence. The students perceived a significantly active role in their learning across both settings at high levels. Their feelings of responsibility and opportunities for independence are aligned with the concept of self-regulated learning, as noted by Dabbagh and Kitsantas (2012), who claimed that BL promotes self-regulation, allowing

students more control over their learning pace and style. Moreover, the high level of involvement in decision-making also supports the idea that BL can enhance learner autonomy, as observed by Lee and Tsai (2011).

Accessibility. The students appreciated the ease of accessing learning activities and the ability to work at their own pace, resonant with the flexibility inherent in BL environments. This is aligned with the findings of Means et al. (2013), who also emphasized the accessibility and convenience of online learning components in BL settings. Flexible scheduling is, after all, a significant benefit of online learning, allowing students to access course materials and complete assignments at convenient times, accommodating work or family commitments (Means et al., 2013).

Computer Usage. The findings revealed extensive use of computers for various academic activities in both settings, underscoring the crucial role of technology in contemporary learning environments. Students' use of computers for tasks such as word processing and emailing assignments reflects a trend highlighted in the literature, where technology is recognized as a facilitator of academic tasks (Huang et al., 2019).

Authentic Learning. The students felt they were able to connect their learning with real-life experiences in both settings. This supports the principles of situated learning, suggesting that learning is more meaningful when directly linked to real-world experiences (Lave & Wenger, 1991). However, the students' preference for online activities in studying real cases and engaging with real-world information also underscores the significance of digital learning environments. This is because online platforms offering tools such as audio-visual materials and interactive exercises provide a rich context for experiential learning, as highlighted in Mayer's multimedia learning theory (2014).

Information Design and Appeal. The results demonstrated that students appreciated the clear text design in both activities, which are aligned with Mayer's (2014) findings in that clarity and simplicity are of paramount importance in learning materials. Furthermore, the students preferred visually appealing materials in face-to-face activities slightly more so than in online activities. This is also consistent with Lohr's (2008) study, which shows that visually appealing and well-organized educational materials tend to boost student motivation and engagement.

Enjoyment. The findings showed that while students generally preferred face-to-face activities for enjoyment due to the immediate and direct interactions they offer, they also appreciated the flexibility and diversity

provided by online activities. The social and collaborative nature of traditional classroom settings is able to facilitate spontaneous discussions and real-time feedback, contributing to the enjoyment of face-to-face learning. However, online activities, particularly those incorporating interactive and gamified elements, are also valued for their ability to engage students and allow them to learn at their own pace, as supported by Dichev and Dicheva (2017). Despite these benefits, there is a need to balance the strengths of both modalities, as online components, while flexible and engaging, may not fully replicate the depth of interaction offered by in-person activities. The quality of the online platforms and their integration into the overall course design are both crucial to maintaining student satisfaction.

Academic Efficacy. The findings revealed that the students perceived their academic efficacy to be average across both modes. This attitude may be influenced by factors associated with the university's location in the west of Thailand, serving EFL undergraduates. Challenges related to self-regulation in learning appear to play a role in the reported average academic efficacy. This is likely because BL demands considerable self-regulation and discipline from students, as emphasized by Zimmerman (2013).

Anxiety. The students reported significant anxiety in both settings. The study indicated higher levels of anxiety during face-to-face activities, particularly with grammar lessons and tests, compared to online activities. This anxiety is often linked to self-confidence issues, particularly in language skills, as shown by Dewaele et al. (2019). However, online learning environments are also not without challenges, with some students expressing stress due to limited content and making the transition to online learning, as highlighted by Martin et al. (2020).

Overall, these findings highlight critical aspects of BL, suggesting that effective BL environments require careful balancing of these elements to maximize benefits and minimize challenges, leading to a more enriched and effective learning experience.

Implications of the Study

The findings of this study have several implications for the implementation and optimization of BL in future EFL contexts. First, the effectiveness of BL in improving students' language proficiency and their positive attitudes towards BL suggest that educational institutions should consider integrating BL into their curricula. This integration should be

accompanied by orientation sessions for both teachers and students on the effective use of technology to maximize the benefits of BL.

Moreover, the necessity for support systems and the role of teacher and peer collaboration indicate that institutions should provide continuous professional development for instructors and foster a collaborative learning environment. Addressing technical issues and incorporating diverse teaching methods can also enhance the overall BL experience, making it more inclusive and effective.

Finally, recognizing the sources of anxiety and academic challenges faced by students can help educators design more supportive and flexible BL environments. Providing resources and tools to enhance self-regulation, along with creating opportunities for meaningful interaction with native speakers, can significantly improve students' academic efficacy and reduce anxiety.

Limitations and Future Research Recommendations

This study had some limitations. The quasi-experimental approach and one-group pretest-posttest design limit the generalizability and causal inferences of this study. Hence, future research should consider a pretest-posttest control group design to enhance the validity of the findings. Comparative studies are also recommended to evaluate BL against other teaching methods.

Moreover, the study focused solely on students' attitudes towards BL, neglecting teachers' perspectives. Future research should also investigate teachers' views to provide a fairer and more comprehensive understanding of BL. Additionally, factors influencing students' learning performance during BL should be explored to identify key areas for improvement.

Conclusion

The digital revolution is constantly transforming higher education, with universities rapidly adopting BL approaches and digital tools to improve student learning. This study demonstrated that BL significantly improved EFL students' English proficiency and fostered positive attitudes. Students perceived BL as beneficial, flexible, and effective in enhancing interaction and autonomy, though technical issues and the need for more content and engaging activities were noted. The findings also underscore the importance of extensive online practice in BL, suggesting that engaged learning practices can enhance students' efficiency and learning outcomes. Looking ahead, BL will likely play an increasingly crucial role in English language teaching, offering more personalized, more interactive, and more accessible learning

experiences as technology evolves. The integration of advanced digital tools, such as AI-driven language learning apps and virtual reality environments, can further enhance BL's effectiveness. Embracing these innovations will be essential for educators to meet the diverse needs of future learners and maintain the relevance of English language education in a rapidly changing world. By addressing technical challenges and continuously enriching content, BL can effectively support the future of English language teaching and learning.

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Appendix

Semi-structure Interview Questions

There were 14 open-ended questions as follows:

1. How does knowing the subject's goals and scope affect your study of this subject?

2. How does blended learning (BL) help you take control of your learning compared to face-to-face learning alone?

3. In what ways does blended learning provide greater access to learning materials and activities than face-to-face or online learning alone?

4. Does blended learning (BL) improve your technology skills? If so, how?

5. How can you apply the knowledge gained in this course to life outside the classroom?

6. What are your thoughts on the content and design of this course, including both face-to-face and online activities? Do you find the media appropriate for your education level?

7. How does BL enhance your enjoyment of learning activities?

8. Do you think you will be successful in this subject? If so, how?

9. Does blended learning make you concerned about learning in this subject? If so, how?

10. Do you like blended learning? Why or why not?

11. Which aspects of BL do you think need improvement?

12. Do you think the learning method used in this course has increased your comprehension of the content? How?

13. Would you like to learn other subjects using this learning format? If so, how?

14. Is the online platform easy to use? Why or why not?