

The Effects of Blended Learning on Chinese Undergraduate EFL Students' Reading Achievement And Engagement

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Abstract

The present study aimed to examine the effects of blended learning on Chinese undergraduate EFL students' reading achievement and engagement. To achieve the objectives, a quasi-experimental research was carried out. It involved 82 junior EFL participants who were divided into a control group and an experimental group in a Chinese university. Only the experimental group was taught with blended learning in EFL reading activities, whereas the control group retained the conventional F2F EFL reading instruction. Both groups received the Reading Comprehension Test (RCT) and the Higher Education Student Engagement Scale (HESES) test during pre-and post-tests. After a twelve-week treatment in the experimental group, independent sample t-test and ANCOVA analyses were utilized to compare the pre-and post-test results of both groups. According to the findings of the study, blended learning showed a significant positive effect on Chinese undergraduate EFL students' reading achievement and overall student engagement in which students' academic engagement, cognitive engagement, social engagement with teachers, and social engagement with peers presented more effective results in blended learning than that in conventional learning, although students' affective engagement indicated no statistically meaningful difference. Therefore, blended learning as a popular learning normality in the digital era can be adopted in EFL reading classes to optimize EFL reading comprehension and activating student engagement in a sustainable manner.

Keywords: Blended learning, EFL reading achievement, student engagement

INTRODUCTION

Higher education is continuously seeking effective learning approaches to meet growing demands and expectations for better education quality. Blended learning has been an inevitably important trend and a learning normality at tertiary education in the digital era. English as a Foreign Language (EFL) reading, as an essential skill, plays a crucial role in EFL learners' academic success. Prior studies have already found an important link between blended learning and EFL reading among undergraduates. It still seems a time-consuming and struggle for most EFL learners in China, and studies on EFL reading have been experiencing a decline since 2012 in China, which is out of proportion to its crucial role in language skills (Cheng & Wu, 2023). Student engagement has become another growing emphasis and an important pedagogical indicator for measuring the success and quality of schools and class instructions and learnings recently. Blended learning has been identified as the potential

facilitation of student engagement, and it has achieved popularity on activating student engagement for EFL learners at tertiary education (Ren, 2023). However, there were little known about the effect of blended learning on undergraduate EFL student engagement in a Chinese setting. Therefore, a quasi-experimental study was conducted to investigate the effects of blended learning on Chinese undergraduate EFL learners' reading achievement and engagement, which is of great value for enhancing pedagogical richness, and providing instructional feedback for EFL reading activities in terms of student-centered learning.

In order to fulfil the research objectives, the present study purports to investigate the following questions:

RQ1: Is there a statistically significant effect of blended learning on Chinese undergraduate EFL students' reading achievement?

RQ2: Is there a statistically significant effect of blended learning on Chinese undergraduate EFL students' engagement?

LITERATURE REVIEW

Blended Learning

Blended learning has been a growing focus and somewhat of a buzzword in tertiary education, but it is still a contentious catchall term since its definition has undergone various evolution and development from a wide variety of ranges.

Blended learning (BL) was emergingly defined as a mixture of 30%-79% online courses and 1%-29% in-class F2F delivery of the content (Allen et al., 2007). Thereafter, BL is no longer limited to a certain proportion of online and offline courses in the field of online education, and it is widely used as a supplement to traditional face-to-face (F2F) classes in regular higher education. Bonk & Graham (2012) claimed that BL was an ongoing convergence of traditional F2F teaching systems and student-centered learning systems with computer-based technology. The definition of blended learning was not constricted by merely the mathematic adding of online and offline learning, it was a strategic learning approach that combined more than two learning methods from both F2F learning and online learning (Shin et al., 2018). Due to the wide spread of COVID pandemic, blend learning indeed reached the pinnacle at tertiary education. Fisher et al. (2021, p.98) interpreted blended learning as "an adaptive, dynamic, self-organizing, co-evolving complex system that seamlessly fuses face to face with technology mediated learning". In short, defining the term blended learning presented a dynamic evolution process.

It is not feasible to design one-size-fits-all blended learning since there are diverse learning objectives, contents, technologies, and materials. Generally, blended learning designs or models can be categorized into macro- and micro-levels: the macro level occurring at school and program levels, while the micro level refers to course and activity levels. Regarding the macro level, for instance, Valiathan (2002) provided three blended learning models in a broad view. The first was the skill-driven learning model, which aimed at developing students' specific knowledge and skills by creating a group-learning plan for teacher-facilitated self-paced mixed learning. Secondly, the attitude-driven learning model was used for developing specific behaviors blends traditional F2F classroom learning with online collaborative event-based activities. The third was the competency-driven learning model, which develop students' workplace competencies with a mix of online tools and live mentoring. Valiathan's blended learning models was viewed as a celebrated model guideline for designing specific formula in learning activities. In terms of the micro level, myriad designs have made in real learning settings. Nerantzi (2020) provided an active blended leaning model with peer instruction and flipped learning in higher education during the COVID pandemic. Peer instruction and flipped learning created integrated online and offline activities in the curriculum design. Before the real class, a self-paced online learning was offered for students. Live flipped and collaborative learning proceeded during the class. And lastly, student maintained their autonomous study after the class. These three stages were conducted in align with the course objectives, fully made use of digital network technologies and enabled active engagement in blended learning context. Feng et al. (2021) proposed a blended

activity design based on the community of inquiry in the “internet+” era. The blended activity strategy takes on various forms at the beginning, middle and end-of-term stage of the course, with the effective integration of teaching presence, social presence and affective presence.

Review of the Related Studies on EFL Reading Achievement

Reading comprehension was defined as an active and constructive process involving the interaction of text-based components like vocabulary and sentence, and reader-based components such as prior knowledge and perception of explicit and implicit meaning of the text (Wolf, 1993). EFL reading or reading comprehension, as a research area of multi-disciplinary perspectives, is a psycholinguistic process of obtaining text meaning (Chen & Chen, 2022). It had long been taken as one of the most core skills in EFL learning. Enhancing EFL reading comprehension was one of the most importance for EFL learners at tertiary education, and studies on EFL reading achievement had been an ongoing concentration. Previous studies had proceeded related researches on EFL reading achievement from a variety of perspectives such as reading strategies self-regulated learning, motivation, and teaching methods.

The ubiquity of digital technology in education had catalyzed related studies on how to facilitate EFL reading comprehension. Pitaloka et al. (2020) carried out a case study regarding the impact of blended learning on reading course for EFL undergraduates in South Sumatera, and found that blended learning benefited undergraduates in EFL reading class with flexible learning, understandable materials, and variations in learning approaches. It provided some advice for designing blended reading course such as time management for reading exercises, and convenient accessible platform. In order to find out whether blended learning could be positive toward EFL students’ reading comprehension ability, Elahi & Heidar (2021) conducted an experimental study among Iranian EFL intermediated students at a private language institute, and explored that the integration of blended learning into task-based language teaching showed a significantly positive effect on Iranian EFL students’ reading comprehension ability. Yudhana (2021) examined the impact of blended learning for the development of EFL reading skills of Thai undergraduates. The result of this quantitative experimental study showed that EFL students’ reading skills were considerably improved in the blended learning context than those without. Rahimzadeh & Gilakjani (2022) used a quasi-experimental study to investigate the effect of blended learning on intermediate EFL students’ reading proficiency in Iran. The results showed that students in blended learning context yielded a higher reading achievement than those in traditional training way.

Review of the Related Studies on Student Engagement

Researches concerning student engagement had been executed actively since 1980s. It had not attained consensus on the definition of student engagement. However, the most welcomed consensus of previous studies regarded student engagement as an active participation and investment in academic and co-curricular or school-related learning activities and university life, which were measured with multidimensional constructs ranging from two to many (Christenson et al., 2012). Measuring or assessing student engagement usually included self-reporting survey, direct observation, expert rating, interviews and experience sampling methods, in which quantitative self-reporting scale was the most used. Measuring student engagement mainly occurred at four levels: Institutional level, school level, course level and activity level (Skinner & Pitzer, 2012). Most previous studies focused on the indicator (or dimensions, and constructs) of the measurement or assessment of student engagement.

As the digital technology had been a crucial part impacting student engagement at tertiary education, an extensive research emphasis on measuring student engagement in blended learning context had been focused. Henrie et al. (2016) explored intensive longitudinal research on examining student engagement at course and activity levels in blended learning context by using self-report survey and behavioral data. Halverson (2016) found the overlap and intersection of students’ behavioral engagement and cognitive engagement at activity level, based on which a conceptual framework of student engagement and the Blended Learning Course Engagement Survey (BLCE) measurement were presented with two constructs: cognitive engagement and affective engagement

in a blended learning environment. Ma & Zhou (2019) designed and developed the Blended Learning Environment Student Engagement Scale (BLSES) in China, and categorized student engagement into six dimensions in blended learning contexts, including active learning, teacher-student interaction, team collaboration, strategy implementation, self-management and affective engagement.

In the realm of EFL learning at tertiary education, Philp & Duchesne (2016) put student engagement on a narrow range of task engagement, and regarded student engagement as four-dimensional constructs involving behavioral engagement, cognitive engagement, social engagement, and affective engagement which mutually acted on each other. Hiver et al. (2021) posited there were at least three or four core dimensions for EFL student engagement, namely, behavioral engagement, cognitive engagement, affective engagement and social engagement. Guo et al. (2022) developed a comprehensive measurement of student engagement in EFL classroom in China, namely, the scale for foreign language classroom engagement (FLCE). The FLCE was constructed based on two learning contexts: individual-based or interaction-based modes, and three engagement constructs: behavioral engagement, cognitive engagement and affective engagement.

As seen in the previously-done studies, prior studies indicated an increasing concentration on the undergraduate EFL reading achievement in blended learning context, and measurement of student engagement either in blended learning context or EFL learning realm. However, few studies were made on blended learning in EFL reading activities, and empirical studies on undergraduate EFL students' reading achievement and engagement in blended learning context is still sparse and in its infancy in China.

METHODOLOGY

Research Design

To examine the effects of blended learning on EFL students' reading achievement and engagement, a quantitative quasi-experimental study was conducted in this present study (see Figure 1). Two groups were involved as the experimental group and the control group. The experimental group was treated with the blended learning of EFL reading activities or modules, whereas the control group received traditional EFL reading modules. Both groups received pre-tests and post-tests including the Reading Comprehension Test (RCT), and student engagement scores from the Higher Education Student Engagement Scale (HESES) before and after the treatment. Both groups were taught by the same EFL highly qualifies EFL teacher for a twelve-week duration.

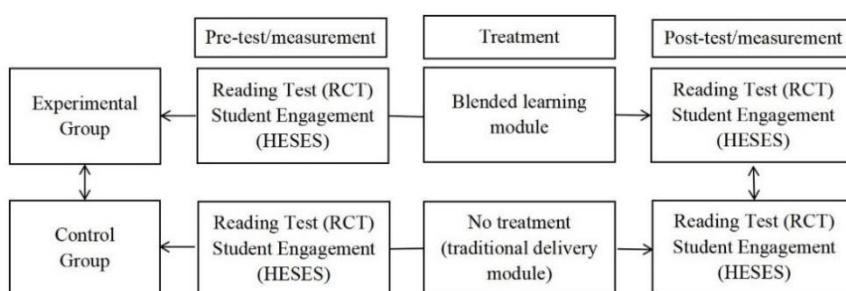


Figure 1: A Quasi-experimental Design

Research Participants

A G*Power 3 was used to determine the samples in this study. According to a compromised effect size of 0.6, an α error probability of 0.05, and a power ($1 - \beta$ err prob) of 0.8, the minimal sample sized was 72 in total and 36 in each group. There were 42 students in each authentic class, which is more than the required numbers. A purposive sampling technique was used to select the experimental group and the control group. Two classes with a total of 82 third-grade (junior) EFL students, who majored in Business English in the academic year 2022-2023 at the Department of Foreign Languages in the study university located in the midwestern China, were selected in this quasi-experimental study.

Research Instrument

In this quasi-experimental study, two kinds of instruments were used to assess EFL students' reading achievement and student engagement to both groups in pre- and post-tests. The reading achievement was measured by the RCT---a widely-used standardized tests issued by Chinese Ministry of Education. Student engagement was also used for measuring EFL students' reading outcomes, which was measured by the Higher Education Student Engagement Scale (HESES) (Zhoc et al., 2019). It investigated undergraduate EFL students' engagement from five dimensions: academic engagement, cognitive engagement, social engagement with teachers, social engagement with peers, and affective engagement in the blended learning context. The HESES was a 5-point Likert scale questionnaire, and the scale score level ranged from 1 to 5 with 1 represents strongly disagree, 2 represents agree, 3 represents neither agree nor disagree, 4 represents disagree, and 5 represents strongly agree.

Reliability and Validity

To verify the validity and reliability of the instruments, a pilot study was conducted to the targeted participants at the study university.

First, a test-retest reliability strategy was used in the pilot study. Students took the RCT twice. It found that there were some items might cause confusion in the pre-test and post-test, which needed to be clarified in clear expression. For instance, students were confused with long paragraphs, therefore, numbers were marked before each paragraph to make it clear.

Second, to check items of the HESES, a pilot study test was conducted to 100 undergraduate EFL learners in the study university. The original HESES includes five dimensions of overall student engagement (STE): (1) Academic engagement (ACE); (2) Cognitive engagement (CGE); (3) Social engagement with teachers (SET); (4) Social engagement with peers (SEP); (5) Affective engagement (AFE). Through the factor analysis in SPSS 26, 22 items out of 28 preliminary items were retained (see Table 1).

Table 1: Factor Analysis of the HESES

	Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Academic engagement	1	0.79				
	5	0.83				
	6	0.76				
Cognitive engagement	10		0.82			
	11		0.80			
	12		0.86			
Social engagement with teachers	13			0.87		
	14			0.87		
	15			0.83		
	16			0.94		
	17				0.74	
Social engagement with peers	18				0.76	
	19				0.82	
	20				0.78	
	21				0.87	
	22				0.88	
	23				0.75	
	24				0.71	
Affective engagement	25					0.90
	26					0.87
	27					0.91
	28					0.71

The HESES was calculated to be reliable with the Cronbach alpha coefficient above 0.7. According to the criterion of Fornell & Lacker (1981), the validity was assessed by both composite reliability (CR) and average variance extracted (AVE) which generally required CR (≥ 0.7) and AVE (≥ 0.5). In this case, all latent variables showed good validity with CR (> 0.7) and AVE (> 0.5) (see Table 2).

Table 2: Reliability and Validity of Latent Variables

Factor	Cronbach's Alpha	CR	AVE
ACE	0.70	0.83	0.73
CGE	0.81	0.89	0.73
SET	0.90	0.90	0.60
SEP	0.91	0.88	0.71
AFE	0.87	0.95	0.64
STE	0.94	0.98	0.62

Data Analysis

The Statistical Package for the Social Sciences 26 (SPSS 26) was used to report all quantitative data. Independent sample t-test and ANCOVA analysis were calculated to compare the statistical difference between groups before and after the treatment.

FINDINGS

Pre-test Results

Before the experiment of blended learning in EFL reading activities, two pre-tests were administered to compare the difference of the control group (CG) and experimental group (EG) in the reading achievement and student engagement through independent-samples t-test.

In Table 3, the mean of the CG and EG was similar (CG=67.11 and EG=67.00), and the standard deviation or std. deviation (SD) of the CG and EG was 7.06 and 8.05, which indicated that two groups showed little difference toward the mean. The t value=0.12 (between +2 and -2) indicated that two groups are similar, and the p value (sig.) was apparently higher than 0.05 ($p=0.90$) which showed no statistically significance between two groups in EFL reading test before the treatment of blended learning in EFL reading activities.

Table 3: Pre-test Result of the RCT Scores

Group	Numbers	Mean	Std. Deviation	t-value	Sig.
Control group	42	67.11	7.06	0.12	0.90
Experimental group	42	67.00	8.05		

The pre-test result of the HESES scores was shown in Table 4. the mean of the CG and EG was similar (CG=3.35 and EG=3.38), and the SD of the CG and EG had similar data points around the mean (CG=0.29 and EG=0.30). Both the t-value ($t=-0.49$) and sig. value ($p=0.62$) indicated the null hypothesis was accepted, or indicated that the CG and EG had no statistically meaningful difference in EFL students' engagement before the treatment of blended learning in EFL reading activities.

Table 4: Pre-test Result of the HESES Scores

Group	Numbers	Mean	Std. Deviation	t-value	Sig.
Control group	42	3.35	0.29	-0.49	0.62
Experimental group	42	3.38	0.30		

Post-test Results

After twelve-week intervention with blended learning in EFL reading activities, two post-tests including the RCT and the HESES were conducted to both groups. In order to test whether blended learning caused the changes on post-test scores of undergraduate EFL students, the pre-test scores were regarded as the possible covariate to be controlled. ANCOVA analysis was used for explaining the post-test results of the RCT and HESES scores.

This quasi-experimental study was to check the cause-and-effect relationship through ANCOVA test, so assumptions of normality, the homogeneity of variance, and the homogeneity of regression slopes need to be fulfilled before the ANCOVA analysis. Firstly, the normality of the post-test scores as dependent variable (DV) need to be met. According to the data checked through Shapiro-Wilk test (See Table 5), post-test scores in both groups showed normal distribution with p value (Sig.) higher than 0.05 ($p=0.12$, $p=0.29$ indicated in the RCT and HESES of the CG, and $p=0.67$, $p=0.06$ indicated in the RCT and HESES of the EG).

Table 5: Tests of Normality in the RCT and the HESES

Post-test	Shapiro-Wilk Result of RCT		Shapiro-Wilk Result of HESES	
	Statistic	Sig.	Statistic	Sig.
Control Group	0.98	0.12	0.97	0.29
Experimental Group	0.98	0.67	0.94	0.06

Secondly, Table 6 indicated the results of Levene's test on the homogeneity of variance both in the RCT ($F(1, 82)=0.06$, $p=0.81$) and the HESES ($F(1, 82)=3.32$, $p=0.07$) had been met or non-significant so equal variance had been assumed with p value (Sig.) higher than 0.05.

Table 6: Tests of Homogeneity of Variance in the RCT and the HESES

Post-test	F	df1	df2	Sig.
RCT	1.71	1	82	0.20
HESES	3.32	1	82	0.07

Thirdly, according to the output of the homogeneity of regression slopes, the relationship between the pretests (covariate) and post-tests (DV) in the RCT and HESES is similar across the groups with $F(2, 81)=2.30$, $p=0.11$ in the RCT and $F(2, 81)=3.11$, $p=0.06$ in the HESES . Hence the assumption of homogeneity of regression slopes was not violated (See Table 7).

Table 7: Tests of Homogeneity of regression slopes in the RCT and the HESES

Source	Sum of Squares		df		Mean Square		F		Sig.	
	RCT	HESES	RCT	HESES	RCT	HESES	RCT	HESES	RCT	HESES
Corrected Model	.65 ^a	398.08 ^a	2	2	0.32	199.04	2.30	3.11	0.11	0.05
Intercept	26.78	3722.70	1	1	26.78	3722.70	191.02	58.13	0.00	0.00
Group * PreTotal	0.65	398.08	2	2	0.32	199.04	2.30	3.11	0.11	0.06
Error	11.36	5187.16	81	81	0.14	64.04				
Total	1302.39	427894.00	84	84						

Then ANCOVA analysis was conducted to compare whether blended learning may positively impact Chinese undergraduate EFL students' reading achievement through the RCT and student engagement through the HESES. Results from the ANCOVA analysis explained the post-test results of the RCT and HESES scores with controlling the pre-test scores. Table 8 was the result of between-subjects effects and indicated that there was a statistically significant difference between the CG and

the EG in EFL reading achievement, $F(1, 81)=8.14$, $p=0.01$, Partial Eta Squared (Partial η^2)=0.09, and the overall student engagement (STE), $F(1, 81)=38.24$, $p=0.00$, Partial η^2 =0.32.

Table 8: ANCOVA Results of the RCT and the overall STE

Source	Sum of Squares		df		Mean Square		F		Sig.		Partial Eta Squared	
	RCT	STE	RCT	STE	RCT	STE	RCT	STE	RCT	STE	RCT	STE
Corrected Model	1709.57 ^a	2.06 ^a	2	2	854.78	1.03	20.55	19.12	0.00	0.00	0.34	0.32
Intercept	1212.88	10.52	1	1	1212.88	10.52	29.16	195	0.00	0.00	0.27	0.71
Pretest	1389.38	0.01	1	1	1389.38	0.01	33.41	0.174	0.00	0.68	0.29	0.00
Explained	338.43	2.06	1	1	338.43	2.06	8.14	38.24	0.01	0.00	0.09	0.32
Error	3368.75	4.37	81	81	41.59	0.05						
Total	424697.00	1363.66	84	84								

On the one hand, the post-test result of the RCT scores in Table 9 showed that blended learning could positively improve Chinese undergraduate EFL students' reading achievement in the EG ($N=42$, $M=72.63$, $SD=7.92$) rather than in the CG ($N=42$, $M=68.73$, $SD=7.92$). In other words, the undergraduate EFL students' reading achievement in the experimental group was better than that in the control group.

Table 9: The Post Result of the RCT Scores

Group	Numbers of students	Mean	Std. Deviation	Sig. (2-tailed)	95% Confidence Interval of the Difference	
					Lower	Upper
Control group	42	68.73	7.30	0.02	-7.21	-0.60
Experimental group	42	72.63	7.92			

On the other hand, the overall student engagement of undergraduate EFL learners in the experimental group was improved through the treatment of blended learning (See Table 10). The CG and the EG showed no difference ($p=0.62$) with $N=42$, $M=3.35$, $SD=0.29$ in the CG and $N=42$, $M=3.38$, $SD=0.30$ in the EG before the treatment of blended learning. However, the EG presented a significant difference and better improvement than the control group ($p=0.00$) with $N=42$, $M=3.86$, $SD=0.18$ in the CG, and $N=42$, $M=4.18$, $SD=0.27$ in the EG.

Table 10: The Pre-test and Post-test of the HESES Scores

Group	Numbers of students	Mean		Std. Deviation		Sig. (2-tailed)	
		Pre-test	Post-test	Pre-test	Post-test	Pre-test	Post-test
Control group	42.00	3.35	3.86	0.29	0.18	0.62	0.00
Experimental group	42.00	3.38	4.18	0.30	0.27		

In addition, although the overall student engagement was significantly improved in the EG after the experiment as above mentioned, however, Table 11 indicated a brief result of between-result effects on the five respective constructs of student engagement. It showed a statistically increase of Chinese undergraduate EFL Students' engagement in the following constructs after the treatment of blended learning ($p<0.05$): Student academic engagement (ACE) was $F(1, 81)=15.88$, $p=0.00$, Partial η^2 =0.16, cognitive engagement (CGE) was $F(1, 81)=67.73$, $p=0.00$, Partial η^2 =0.46,

social engagement with teachers (SET) was $F(1, 81)=8.69, p=0.00, \text{Partial } \eta^2=0.10$, and social engagement with peers (SEP) was $F(1, 81)=24.25, p=0.00, \text{Partial } \eta^2=0.23$ including two sub-constructs of peer engagement (SEP-PE) ($F(1, 81)=17.37, p=0.00, \text{Partial } \eta^2=0.18$) and beyond-class engagement (SEP-BE) ($F(1, 81)=15.63, p=0.00, \text{Partial } \eta^2=0.16$) were all statistically increased after the treatment of blended learning ($p<0.05$). However, student affective engagement (AFE) showed no significant difference between the experiment group and the control group ($F(1, 81)=3.60, p=0.06, \text{Partial } \eta^2=0.04$).

Table 11 : ANCOVA Analysis of the Constructs in the HESES

Construct	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
ACE	4.97	1.00	4.97	15.88	0.00	0.16
CGE	7.70	1.00	7.70	67.73	0.00	0.46
SET	1.34	1.00	1.34	8.69	0.00	0.10
SEP	1.60	1.00	1.60	24.25	0.00	0.23
SEP-PE	1.71	1.00	1.71	17.37	0.00	0.18
SEP-BE	1.41	1.00	1.41	15.63	0.00	0.16
AFE	0.30	1.00	0.30	3.60	0.06	0.04

(The error of df is 81 for all construct items, so $F(1, 81)$ was described in the passage above.)

DISCUSSION

In order to examine effects of blended learning on undergraduate EFL students' reading achievement and engagement, a quasi-experimental study was administered to two groups involving the experimental group (42 students) and the control group (42 students) in a Chinese university. After 12-week duration of blended learning to the experimental group, the findings of two post-tests were shown as follows.

Firstly, blended learning had a significant effect on undergraduate EFL students' reading achievement ($p<0.05$). In other words, using blended learning in EFL reading activities was more effective than using traditional learning. The findings obtained in this study revealed the potential strength of using blended learning for improving EFL students' reading comprehension successfully. It was in accordance with conclusions from some similar prior researches. Ghazizadeh & Fatemipour (2017) examined the positive effectiveness of implementing blended learning on EFL learners' reading proficiency in Iran.

Secondly, utilizing blended learning could significantly increase undergraduate EFL students' overall engagement in which four out of five engagements were increased respectively in terms of academic engagement, cognitive engagement, social engagement with teachers, and social engagement with peers, yet except affective engagement. It is aligned with some previous studies as Bedenlier et al. (2020) found that affective engagement was the lowest observed construct, however, educational technology was an inevitable support for improving student engagement nowadays.

CONCLUSION

The present study investigates the effects of blended learning on undergraduate EFL students' reading achievement and engagement in a Chinese setting. It is empirically confirmed that utilizing blended learning can significantly increase students' EFL reading comprehension and overall student engagement. In brief, it suggests that blended learning should be promoted widely for EFL students' reading comprehension, and active student engagement in EFL reading activities. However, some limitations should be considered because of the short duration and restricted numbers of participants in this quasi-experimental study. A longitudinal study could be conducted to investigate Chinese EFL students' reading comprehension and engagement, and a qualitative study such as focus group discussion can obtain in-depth perception toward EFL students' experiences in blended learning

context for future study. This would allow researchers to examine the sustainability of blended learning and shed light on factors contributing to EFL reading achievement and student engagement.

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