The impact of blended learning-based scaffolding techniques on learners' self-efficacy and willingness to communicate

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ABSTRACT: Motivating learners to engage in effective communication is one of the fundamental concerns of language education. Accordingly, an educational context where L2 learners display a willingness to communicate (WTC) is a requirement for successful learning. A further concept that should be studied regarding WTC is students' self-efficacy from the socio-cognitive theory. Moreover, to boost the quality of learning, English as a Foreign Language (EFL) students should receive effective support, including scaffolding that motivates them to build up their knowledge in Blended Learning (BL) settings. To examine BL-based scaffolding techniques on students' self-efficacy and WTC, this quasi-experimental design involving 232 participants were assigned to the experimental and the control groups including both intermediate and advanced learners. Subsequently, the self-efficacy questionnaire, and WTC questionnaires were distributed among them as a pretest. The statistical results of Two two-way ANCOVA tests showed that both language proficiency and the treatment type are the significant moderators of the efficacy scores. The experimental group outperformed the control group and the advanced learners outperformed the intermediate ones. In addition, the results indicated that while language proficiency did not moderate the WTC scores, the treatment type was the significant moderator of the WTC scores.
Keywords: Blended learning, Scaffolding, Self-efficacy, Willingness to communicate, Zone of proximal development

El impacto de las técnicas de andamiaje basadas en aprendizaje combinado en la autoeficacia y el deseo por comunicarse

RESUMEN: Motivar al alumnado para que participen en una comunicación efectiva es una de las tareas fundamentales de educación lingüística. En consecuencia, el deseo por comunicarse (WTC) y la autoeficacia de alumnos de L2 son requisitos para un aprendizaje exitoso. Para mejorar la calidad del aprendizaje, los estudiantes de inglés como lengua extranjera necesitan un apoyo efectivo, incluido andamiaje que los motive a desarrollar sus conocimientos en contextos de aprendizaje combinado (BL). Para examinar las técnicas de andamiaje basadas en BL sobre la autoeficacia y el WTC del alumnado, este diseño cuasi experimental cuenta con 232 participantes que fueron asignados a los grupos experimentales y de control, incluyendo estudiantes de nivel intermedio y avanzado. Posteriormente, se distribuyeron

como pre-test los cuestionarios de autoeficacia y los del WTC. Los resultados estadísticos de dos pruebas ANCOVA bidireccionales mostraron que tanto el dominio del idioma como el tipo de tratamiento son los moderadores significativos de las puntuaciones de eficacia. El grupo experimental superó al de control y los alumnos de nivel avanzado superaron a los de nivel intermedio. Los resultados indicaron que mientras que el dominio de lengua no moderó las puntuaciones del WTC, el tipo de tratamiento sí fue un moderador significativo.

Palabras clave: Aprendizaje combinado, Andamiaje, Autoeficacia, Deseo por comunicarse, Zona de desarrollo próximo

1. Introduction

A stream of different kinds of internet-based courses were conducted after the emergence of modern technology devices (Tratnik et al., 2019; Gao et al., 2022; Wang, 2023; Wang, Pan & Wang, 2023). Educational organizations are benefiting from advanced teaching, commercializing teaching, and enhancing requests for internet-based teaching, particularly during Corona Pandemic (Adedoyin & Soykan, 2020; Gao et al., 2022; Wang, 2023; Wang, Pan, & Wang, 2023). Conventional teaching has given place to more technology-embedded methods. Technology developments have made it possible for local and international data sharing through modern ways such as blended learning (BL) (Irgatoğlu, 2021) and so on alluding to the concept of embedding in-person teaching with internet-based teaching (Siripongdee et al., 2020). Indeed, BL refers to a transformational idea that aims to maintain cooperative learning, positive learning, and computer-assisted education as offline and internet-based learning (Dangwal, 2017) by integrating dimensions of synchronous and asynchronous internet-based learning alternatives, and education and learning methods such as in-person and digital learning (Mali & Lim, 2021). The enhancement of BL outcomes requires the establishment of useful educational support to students (e.g., on-time and proper scaffolding) that drives the students to build up their own knowledge in online settings. This renders learning more meaningful and interesting (Oliver & Herrington, 2003). It would be very useful to combine BL with scaffolding as students learning L2 in a BL setting mediated by scaffolding can gain a higher level of competence than those students who avoid using scaffolding (Amelia et al., 2020).

In addition, it is crucial to investigate the characteristics and causal variables of learning and education comprising the benefit or failure of internet-based education (Wei & Chou, 2020). A major difficulty that language educators can encounter is encouraging and enhancing students' passion in the learning setting and a prominent element in the field is self-efficacy (Warden et al., 2020). Also, the recent emergence of BL made the investigation of self-efficacy as a possible correlate of a positive result in internet-based language learning attractive to researchers (Alqurashi, 2016). Great self-efficacy leads people to encounter difficulties and impediments according to their degree of information and competence (Hung et al., 2021).

Additionally, the communicative attitude in language education indicates the aim of language topics which is to expand learners' communicative and interactive proficiency (Zarrinabadi, et al., 2021). Therefore, WTC could guide real communication, which could assist prosperous second-language interaction and, finally second-language learning (Dörnyei et al., 2015). Also, WTC in this setting can accelerate L2 learning as it provides the students

with ample opportunities to use authentic L2 which is deemed an essential component for L2 development (MacIntyre & Legatto, 2011).

Despite the bulk of investigations conducted on EFL learners' WTC in various settings (Lu, 2007; Oz et al., 2015; Peng, 2019), along with the role of learners' efficacy in language learning (Wilson & Narayan, 2016; Zangoie & Derakhshan, 2021; Wang & Derakhshan, 2023), scant research has been done to shed light on the factors influencing EFL learners' WTC. Following the model developed by MacIntyre et al. (2001), a variety of factors contribute to WTC, including social, contextual, and situational ones. As far as the L2 classroom is concerned, one of the most outstanding factors impacting WTC is the interaction strategy adopted by the teacher which is scaffolding as this strategy seems to pave the way for effective interactions. More importantly, it seems that no investigation has been carried out to examine the contribution of scaffolding in the BL context. Accordingly, the current study seeks to probe the issue by considering its role in BL classes and its impact on learners' WTC and efficacy.

2. REVIEW OF THE LITERATURE

2.1. Self-efficacy

An encouraging mental variable is self-efficacy which is a decisive agent for EFL students' overall or educational success (Truong & Wang, 2019), which is defined as learners' assurance in their ability to classify and do courses required to gain specific kinds of measure (Artino, 2012). In the area of EFL/ESL learning, self-efficacy refers to one's beliefs and perceptions concerning how well he/she is able to do a task successfully in English given his/her past experiences (Wang et al., 2014; Han & Wang, 2021). This is a person's self-confirmation of achieving the goal of doing an activity which also may change the student's conduct (Bandura, 2010). A great degree of self-efficacy contributes to the fulfillment of desired work, enabling the individual to live up to the expected performance, as well as personal well-being (Jena & Gupta, 2019; Han &Wang, 2021; Fan & Wang, 2022; Wang, Derakhshan & Azari Noughabi, 2022). Also, students with great degrees of self-efficacy reach great degrees of mental functioning, while students having lower degrees of self-efficacy attempt to do solely easy educational activities to constrained attempts of proficiency (Yantraprakorn et al., 2018).

2.2. Willingness to Communicate (WTC)

Literature shows that WTC has been the focus of L2 learning studies given its importance in enhancing L2 learning (Alemi & Pahmforoosh, 2012; Clément et al., 2003; Joe et al., 2017; Lee, 2020; Lee & Drajati, 2019; Wang & Derakhshan, 2023). Indeed, the high level of WTC is conducive to an increase in L2 use and interactions. This would result in the effective development of L2 competence (Joe et al., 2017). This concept was initially considered a stable personality trait of native speakers that signaled whether or not they like to participate in communication with others (McCroskey, 1992). Accordingly, WTC is defined as the students' stable desire to engage in L2 communication; moreover, it was regarded as a multi-layered contextual variable that originated from the interplay of differ-

ent linguistic, communicative, and social variables. As pointed out by Zhang et al. (2018), prospective investigations in this area should study WTC from a dynamic state perspective. This involves taking into account different situational factors, as well as psychological ones. Indeed, shedding light on the contextual factors contributing to fostering WTC leads to the formation of a class context where L2 learning is enhanced. Given the adoption of a new conceptualization of WTC as a construct made up of personality and contextual elements, many researchers sought to shed light on the possible correlation between WTC and other personal and circumstantial variables in different ESL settings (MacIntyre, 2007).

2.3. Scaffolding

As one of the commonly used strategies to reinforce learners' L2 learning, scaffolding has been attracting the attention of an increasing number of researchers (Bakker et al., 2015; Gonulal & Loewen, 2018; Jumaat & Tasir, 2014). Wilson and Devereux (2014) described scaffolding as the provision of support that assists a person or a group of learners to go beyond the tasks which they can perform successfully. This is because of the attainment of new procedural skills and development required for doing difficult tasks. Despite the learning state, whether in-person or internet-based, educators must ease the students' transmission from their current degree of capability to a greater level of aptitude. Three aspects of Social Cultural Theory (SCT) are illustrated from a constructivist perspective: development through social interaction is of great importance; enormous importance is attached to the social and cultural context where people interact with one another; and signs and symbols play a crucial role in SCT as they provide people with the cues on their path of successful development (Williams & Burden, 2002). Also, emanating from Vygotsky's Zone of proximal development (ZPD), scaffolding has a noteworthy function in learning as learners need to engage with another, more knowledgeable person or teacher (Clark, 2018). The ZPD has been described as the gap between what people can do on their own and the next level of development and learning that can be realized with assistance (Yantraprakorn, et al., 2018).

2.4. The Relation between the Variables

Language learners are sometimes reluctant to employ an L2, avoiding engagement in interactions or tasks. One reason for this reluctance can be the lack of communicative competence (Liu & Jackson, 2008). Thanks to the growing development of technologies, EFL learners need to use English in a range of digital settings more than ever (Fathi et al., 2021). To examine the structural relations among teacher self-efficacy, technology self-efficacy, and intentions to use technology in an EFL context, recent investigations have been carried out to create a connection between L2 WTC and technology (Lai et al., 2016; Sampson & Yoshida, 2020). There have been increasing investigations on technology-enhanced learning to provide fresh evidence for the adoption of technology in educational contexts (Wang & Hannafin, 2005). The use of technologies makes it possible for educators to provide a diverse range of scaffolding features aimed at supporting student autonomous learning and it also helps teachers to guide students within complex circumstances.

The role of SCT theory as a foundation for the incorporation of scaffolding to enhance WTC is evident by the contribution SCT makes in creating opportunities for students to use an L2. This theory accounts for the relationship among learners, behavior, and environment, indicating the online students' perseverance. This theory also emphasizes creating an active learning environment through learners' interaction (Jena, & Barman, 2018). Accordingly, it can be stated that learners' beliefs in their competence that come through by engaging in interactions allow them to gain self-confidence or self-efficacy (Wijaya & Embato, 2020).

A recent strand of studies has examined the contribution of scaffolding to online learning and whereas studies on the combination of scaffolding in online curriculums has occurred as an innovative research trend within last years, a detailed review of the prior studies indicates a noteworthy gap in the papers about the use of scaffolding in L2 education. For instance, Ak (2016) showed that participants in scaffolding groups outperformed other groups in terms of message posting and communication. Ak concluded that this kind of scaffolding improves learners' task orientation, facilitating task-based learning. The outcomes of the study by Valencia-Vallejo et al. (2019) specified that scaffolding enhances metacognitive ability, the degree of educational self-efficacy, and successful learning. In the same vein, the results showed that learners with diverse cognitive styles can obtain equivalent learning outcomes. In an investigation, Suryani et al. (2021) indicated that the BL-based scaffolding improved the participants' learning outcomes. The conclusion was drawn based on the signs of learning enhancement, learners' self-efficacy, and their positive responses. Zhang et al. (2021) showed that scaffolding was found to have an impact on the higher level of computational thinking skills and self-efficacy, helping learners to obtain better academic outcomes. Even though there is a large number of studies on computer assisted teaching with scaffolding approaches, there are insufficient studies on employing these types of tactics in language education in BL context. Regarding the above-mentioned literature on the role of the scaffolding intervention in language context and different domains, the present study tried to answer the following research question

Q1: Do blended learning-based scaffolding techniques have any significant impact on Chinese intermediate and advanced students' self-efficacy?

Q2: Do blended learning-based scaffolding techniques have any significant impact on Chinese intermediate and advanced students' willingness to communicate?

3. Method

3.1. Participants

The participants in this study were composed of 232 Chinese undergraduate students enrolled in a wide spectrum of fields of study, including law, computer engineering, stomatology, education, philosophy, and public management of a comprehensive university in Henan Province of central China. The students were in their freshman year of college and their ages ranged from 16 to 20. They were assigned into the experimental group (119) and the control group (113) based on whether the instructor will provide regular scaffolding techniques for the participants or not. Then, the participants within each group were further divided into the intermediate group (N=63, test score $\geq 90 < 120$) and the advanced group

(N=56, test score ≥120) according to their self-reported test scores (150 in total) in Gaokao (the National College Entrance Examination of China, which is equal to A-level in British Commonwealth or SAT in the United States of America). We chose this national examination instead of a placement test to evaluate the participants' English attainment because it was closely related to students' admission into university, and they took such a test very seriously by bringing out their authentic language proficiency accordingly. The task types of this nationally unified English examination include listening comprehension, reading comprehension, cloze tests, proofreading and writing. Since the participants were from a key provincial university where vast majority of the enrolled students are supposed to have good achievement in their English tests, this study did not include those sporadically less successful learners in the examination.

3.2. Instruments

3.2.1. Self-Efficacy Questionnaire

To measure learners' self-efficacy, the Questionnaire of English Self-Efficacy (QESE) scale was used including 32 items developed by Wang (2014) Each item elicits responders' judgments regarding their abilities to perform specific tasks through the use of English as a foreign language. The objective of the scale is to assess the subsequent four domains: Self-efficacy for listening, speaking, and reading and self-efficacy for writing. The items are measured on a 7-point rating scale from (1 =I cannot do it at all to 7 =I can do it very well). The reliability for the self-efficacy in the context of the study was 0.89 using Cronbach's alpha formula.

3.2.2. Willingness to Communicate Questionnaire

The second questionnaire used to measure students' willingness to communicate inside the classroom was the Willingness to Communicate (WTC) scale developed by MacIntyre et al. (2001). It included 27 items measured on a five- 5-point rating scale ranging from 1 (almost never willing) to 5 (almost always willing). The reliability for this questionnaire in the context of the study was 0.82 using Cronbach's alpha formula.

3.3. Procedure

An iterative progression of independent translation and back-translation of the English questionnaire was employed to guarantee the similarity of meaning between the English and Chinese versions. Finally, the Chinese version of the questionnaire was administered to the students of both groups through WeChat via Wenjuanxing, which took no more than 15 minutes for the participants to complete. Following the pre-test administration, both groups received 10 sessions of instructions. The BL tasks were divided into two types, namely face-to-face tasks in the class and online tasks through WeChat, which were incorporated with the scaffolding strategy. The following steps were taken in this experimental group:

Initially, the tasks taken from their course books were given to the participants for each session. The interaction started with the teacher's selection of an issue related to

the topic and the teacher called a student to answer the first question related to the topic while ensuring that the other learners were actively engaged. The intervention included the provision of cognitive scaffolding during classroom tasks that are characterized by three features spotted by Van de Pol et al. (2010). They are as follows: contingency, fading, and transfer of responsibility. Given that contingency entails the realization of scaffoldings, the instructor's support needed to be tailored to the learners' current level of performance. To be more specific, the teacher provided the first addressed student with prompts, ranging from the most implicit to the most explicit ones, to not only identify the area of difficulty but also permit the student to move toward his/her degree of maximal possible development. In general, as opposed to the ordinarily held psychological view, learning happens at the convergence of the social, cultural, and individual levels.

Given the learner's failure to identify or correct the errors, the instructors intervened as a mediator and provided the prompts. Initially, she started off from the most implicit ones moving on to the most explicit mediation. This continued until the intended correct forms are identified. The reduction in the number of prompts was based on the feedback the teacher received from the groups. In instances where the student gave a wrong answer, the instructor tried to use scaffolding techniques by providing some mediation until the latter arrives at the right answer as its goal is to push the group ahead in its ZPD by negotiating with individual members of a group in their respective ZPDs.

In the control group, students were only required to attend discussions and no elements of the procedure were implemented. After the end of the intervention, the two questionnaires were administered to the groups as the post-test to assess their presentations and to examine whether or not this type of intervention, namely BL scaffolding had any impact on their WTC and self-efficacy or not.

3.4. Data Analysis

Two two-way ANCOVA were used to compare the self-efficacy as well as the WTC of the participants in the post-test stage while compensating for the initial differences in the pre-test across both groups. The assumptions of running the parametric test were in place.

4. Results

Initially, the data were sorted based on the participants' Gaokao scores. Table 1 presents the descriptive statistics of four sub-groups, i.e., control-intermediate (CI); control-advanced (CA); experimental-intermediate (EI); and experimental-advanced (EA).

Table 1. *Descriptive Statistics of the Scores*

			Minimum	Maximum	Mean	SD	Skewness Ratio
Control	Intermediate[1]	Efficacy	Pretest	55.00	176.00	129.4921	25.97261	-1.23841
			Posttest	65.00	181.00	131.7302	24.77460	-0.12583
		WTC	Pretest	42.00	115.00	73.1587	19.06797	0.821192
			Posttest	44.00	116.00	75.2063	17.65453	0.993377
	Advanced[2]	Efficacy	Pretest	77.00	199.00	137.4600	28.31687	-0.24926
			Posttest	66.00	199.00	141.2800	26.61520	-0.67953
		WTC	Pretest	36.00	130.00	77.9400	19.58905	0.115727
			Posttest	49.00	121.00	80.7800	18.16286	0.020772
Experimental	Intermediate[3]	Efficacy	Pretest	72.00	182.00	124.6825	21.56672	-0.6457
			Posttest	89.00	192.00	135.3651	21.43580	0.049669
		WTC	Pretest	42.00	107.00	68.5397	15.53749	1.698675
			Posttest	33.00	122.00	80.7460	18.28799	0.238411
	Advanced[4]	Efficacy	Pretest	91.00	179.00	136.1250	21.04287	0.087774
			Posttest	98.00	196.00	148.5357	19.93076	-0.05956
		WTC	Pretest	44.00	118.00	77.1071	18.30815	0.285266
			Posttest	53.00	124.00	87.6786	17.52412	0.573668

1: Valid N = 63; 2: Valid N = 50; 3: Valid N = 63; 4: Valid N = 56

4.1. Checking the Assumptions

Before running the ANCOVA test, it was necessary to check three main assumptions, namely *lack of unusual points*, *linearity and homoscedasticity*, *homogeneity of regression slopes*, and *equality of variances* (Tabachnick & Fidell, 2013). Also, there are three main types of unusual points: outliers, leverage points, and influential points. Furthermore, if an outlier is extreme in the X vector, it is called a leverage point, and if it changes the residual line dramatically, it is called an influential point. By examining the data, the minimum and maximum obtained z-scores for self-efficacy pretests were found -2.44 and 2.66, respectively. The figures were -2.82 and 2.64 for the post-test scores. Concerning the WTC scores, the standardized values for the pretest ranged from -2.14 to 2.66 and the values for the post-test ranged from -2.61 to 2.55. Figure 1 shows the scatterplot of standardized residuals, in which the existence of any possible outlier can be visually inspected. The right scatterplot presents the self-efficacy scores and the one on the left shows the values for WTC.
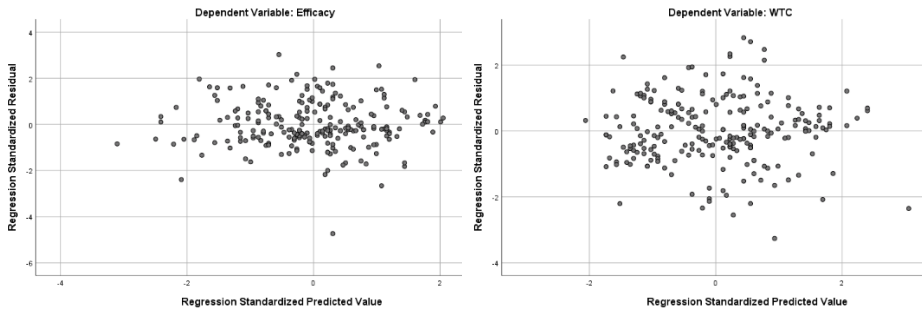
Figure 1. Scatterplot of Standardized Residuals

The examination of Figure 1 suggested that some cases exhibit the features of outliers. Nevertheless, in large samples, finding several outlying residuals is common (Tabachnick & Fidell, 2013). Since there were multiple variables in the study, the researcher generated four scatterplots which are presented in Figure 2.
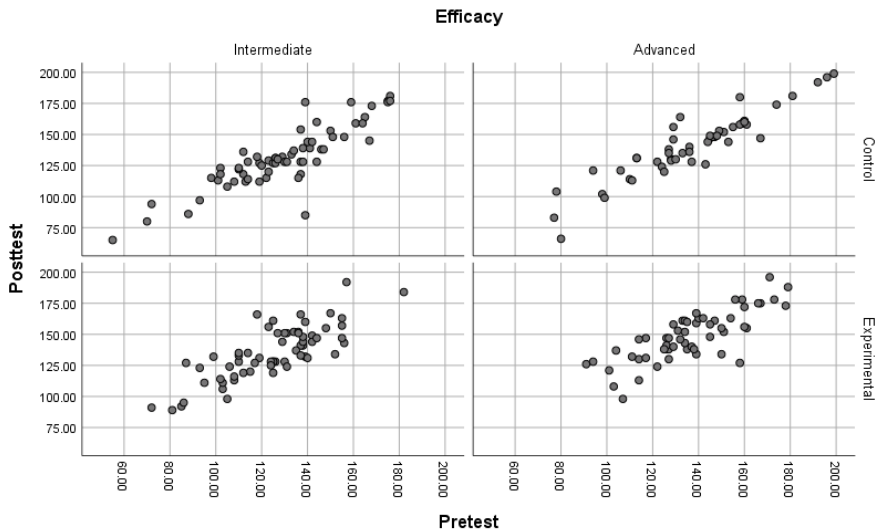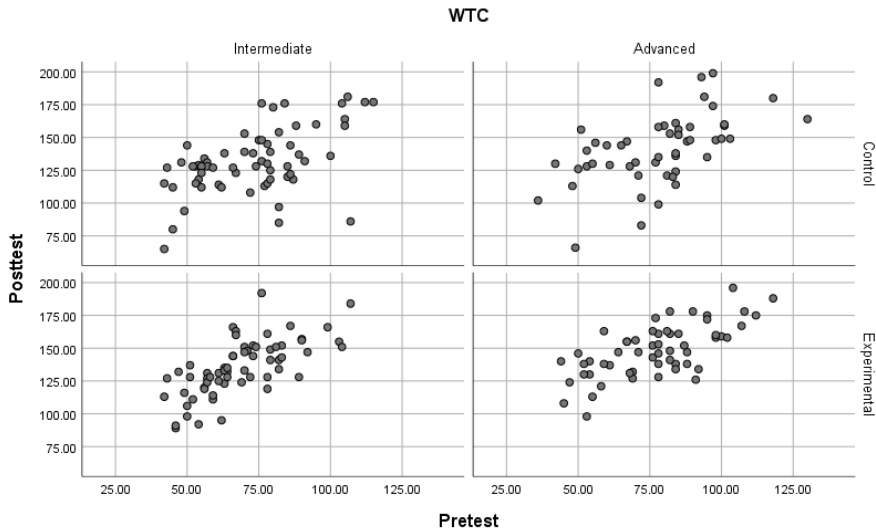
Figure 2. Linearity of Relationship between Covariate and Dependent Variables

As Figure 2 shows, these variables have no linear relationships. Therefore, one can confirm the linearity of relations. After this procedure, the homogeneity of regression slopes was checked based on the non-significant relationship between the covariate and the independent variable. This was done by making a univariate model to test the interactions. Tables 2 and 3 report the result of the related between-subjects effects.

Table 2. *Homogeneity of Regression Slopes: Efficacy Across Treatment and Language Proficiency*

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	100316.567[a]	7	14330.938	99.410	.000
Intercept	7263.361	1	7263.361	50.384	.000
Group	596.651	1	596.651	4.139	.043
Proficiency	29.605	1	29.605	.205	.651
Pretest	84478.780	1	84478.780	586.006	.000
Group * Proficiency	80.248	1	80.248	.557	.456
Proficiency * Pretest	.688	1	.688	.005	.945
Group * Pretest	189.607	1	189.607	1.315	.253
Group * Proficiency * Pretest	65.148	1	65.148	.452	.502
Error	32291.877	224	144.160		
Total	4604245.000	232			
Corrected Total	132608.444	231			

a. R Squared = .756 (Adjusted R Squared = .749)

Table 3. *Homogeneity of Regression Slopes:*
WCT Across Treatment and Language Proficiency

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	46812.173[a]	7	6687.453	48.447	.000
Intercept	8289.303	1	8289.303	60.051	.000
Group	334.898	1	334.898	2.426	.121
Proficiency	307.498	1	307.498	2.228	.137
Group * Proficiency	128.383	1	128.383	.930	.336
Proficiency * Pretest	253.891	1	253.891	1.839	.176
Group * Pretest	8.461	1	8.461	.061	.805
Group * Proficiency * Pretest	172.677	1	172.677	1.251	.265
Error	30920.430	224	138.038		
Total	1596970.000	232			
Corrected Total	77732.603	231			

a. R Squared = .602 (Adjusted R Squared = .590)

By scrutinizing Tables 2 and 3, it can be proposed that the Sig. value for the interactions between treatment type and post-test was not significant for both efficacy ($F_{(1,224)}$ = .452, p = .502 > .05) and WTC ($F_{(1,224)}$ = 1.251, p = .265 > .05). Moreover, the interactions were non-significant for all other pairs of variables in the model, i.e., proficiency and treatment group, proficiency and covariate (pretest), and treatment and covariate in both models. Consequently, the assumption of homogeneity of regression slopes was also met. The final assumption was also checked (Table 4).

Table 4. *Levene's Test of Equality of Error Variances*

Model	F	df1	df2	Sig.
1[a]	1.838	3	228	.141
2[b]	2.536	3	228	.058

[a] Design: Intercept + Efficecy.Pre + Group + Proficiency + Group * Proficiency
[b] Design: Intercept + WTC.Pre + Group + Proficiency + Group * Proficiency

As described in Table 4, the assumption of the equality of variance was assured (p = .43). This designates that the variances are equal. Being assured of the three assumptions, the researcher was certain of using a two-way ANCOVA.

4.2. The Effect on Self-Efficacy

The results indicate whether the groups are meaningfully different regarding self-efficacy (the scores when controlling for the impact of pretest scores).

Table 5. *The Two-Way ANCOVA Test Results for Efficacy Scores*

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	100073.391[a]	4	25018.348	174.555	.000	.755
Intercept	7119.057	1	7119.057	49.670	.000	.180
Pretest	90565.971	1	90565.971	631.887	.000	.736
Group	3634.113	1	3634.113	25.356	.000	.100
Proficiency	635.068	1	635.068	4.431	.036	.019
Group * Proficiency	8.455	1	8.455	.059	.808	.000
Error	32535.053	227	143.326			
Total	4604245.000	232				
Corrected Total	132608.444	231				

a. R Squared = .755 (Adjusted R Squared = .750)

As informed in Table 5, no significant relation was found between the type of treatment and language proficiency of the participants (F $_{(1, 227)}$ = 0.059, p = .808 > .05). However, the results indicated that both language proficiency (F $_{(1, 227)}$ = 4.431, p = .036 < .05) and the treatment type (F $_{(1, 227)}$ = 25.356, p = .000 < .05) are the significant moderator of the efficacy scores. The experimental group outperformed the control group (adjusted MD = 3.291, SE = 1.61, partial eta squared = 0.10, demonstrating a large effect size) and the advanced learners outperformed the intermediate ones (adjusted MD = 7.968, SE = 1.58, partial eta squared = 0.019).

4.3. The Effect on WTC

The two-way ANCOVA test was also run to answer the second research question proposed in the current study. The main results of the test are reported in Table 6.

Table 6. *The Two-Way ANCOVA Test Results for WTC Scores*

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	46405.327[a]	4	11601.332	84.064	.000	.597
Intercept	8426.652	1	8426.652	61.060	.000	.212
Pretest	41787.772	1	41787.772	302.798	.000	.572
Group	3896.132	1	3896.132	28.232	.000	.111
Proficiency	88.596	1	88.596	.642	.424	.003
Group * Proficiency	31.046	1	31.046	.225	.636	.001
Error	31327.276	227	138.006			
Total	1596970.000	232				
Corrected Total	77732.603	231				

a. R Squared = .597 (Adjusted R Squared = .590)

As indicated in Table 6, no significant interaction was found between the type of treatment and language proficiency of the participants (F $_{(1, 227)}$ = 0.229, p = .636 > .05). However, the results indicated that while language proficiency (F $_{(1, 227)}$ = 0.642, p = .424 > .05) did not moderate the WTC scores, the treatment type (F $_{(1, 227)}$ = 28.232, p = .000 < .05) was the significant moderator of the WTC scores. The experimental group outperformed the control group (adjusted MD = 8.257, SE = 1.55, partial eta squared = 0.111, representing a large effect size).

5. DISCUSSION

This study was mainly to inspect the impact of BL-based scaffolding techniques on the self-efficacy and WTC of EFL learners. The findings proved that students' interaction in the context of this type of scaffolding enhanced their self-efficacy and WTC. Even though the learners in both groups enhanced their self-efficacy and WTC, the scaffolding group experienced a higher level of improvement. These findings are consistent with Vygotsky's model of ZPD (1978) as he asserted that scaffolding instruction help spot the learners' abilities, enabling them to deal with their language learning issues. Instructors' provision of implicit corrective feedback mediated by scaffolding within a positive atmosphere can enhance learning outcomes, while the negative ramifications associated with receiving corrective feedback can be reduced. Indeed, the core objective of learning an L2 is to be able to engage in effective communication. The results of this study reported that scaffolding makes a significant contribution to facilitating learning as scaffolding mediated by BL improved learner-learner

interactions, as well as the interaction between learners and teachers. Indeed, the teachers built a stress-free, intimate, and social learning atmosphere that enabled learners to engage, which made them motivated in conducting learning activities.

In an EFL environment in which students are constrained by limited opportunities for English production, an environment can be created through BL-oriented scaffolding. This can create the chances for practicing L2 in an effective, purposeful, and less stressful manner. One more reason for this can be attributed to the learners' views of their teachers as considerate people who attach importance to communication with the students (Comadena et al., 2007). The ability to predict learners' WTC based on teacher-student rapport formed by scaffolding can be explained by the fact that the bonds created by L2 teachers with the students push the latter to engage in communication in the target language. This result is in line with the assertion of Martin and Collie (2019) who said that positive teacher-learner rapport plays an important role in the classroom, encouraging the learners to vigorously communicate with their classmates. Concerning the efficiency of employing scaffolding tactics to improve learners' productive skills such as speaking and writing, a scale by Adillah (2019) displays that scaffolding in speaking tasks could decrease stress and heighten the oral skills of undergraduate learners in Malaysia. The findings are in line with those of Zarandi and Rahbar (2016), who proved that the learners' general speaking capabilities increased remarkably when the learners were exposed to scaffolding and were told how to implement them in class. The results of this research support those indicated by Kamil (2017) who scrutinized the use of scaffolding in teaching writing among Indonesian students. He proved that the using cognitive scaffolding (reading text model) provided supportive and corrective feedback, explained grammar and text structure (asking questions from previous parts, providing illustration), and engaged students in the learning process). The results of the study are in line with those of Yantraprakorn et al. (2018), who verified the efficacy of scaffolding in improving student's self-efficacy and accordingly writing skills. Likewise, scaffolding assisted them to comprehend and master writing activities. Consequently, high degree of self-efficacy gave confidence to students' capabilities to do tasks efficaciously.

Furthermore, one can justify this result by the contributions scaffolding makes; scaffolding results in more confidence, which, in turn, leads to a higher level of self-efficacy and learning. Furthermore, scaffolding creates a proper learning pace for students, leading to self-efficacy. Likewise, the impact of scaffolding on students' self-efficacy can be justified based on Bandura's framework. Working within this framework can enhance students' self-assessment and self-monitoring, with the results indicating a positive effect on their self-efficacy. In other words, the tasks within this model provide chances for students to become information processor and have a positive effect on their self-efficacy perception (Valencia-Vallejo et al., 2019). Tuckman (2007) stated the effects of scaffolding in the form of synchronous, online supporting and teaching that had better results in procrastinating pupils than traditional one and allows them to stay on tasks and caused a better learning. It should be asserted that encouraging learners to replicate the status of their own knowledge and providing them with extensive opportunities to adjust goals, as well as monitor their knowledge through self-assessments allows them to consider themselves as proficient individuals. Such persons can obtain their own objectives based on their own learning pace, making them trust themselves and their capabilities.

6. Conclusion, implications, and future direction

Scaffolding has been the subject of multiple studies as a useful educational strategy since it enables learners to engage in learning, thus improving learning outcomes (Belland et al., 2017). In the context of L2 teaching, scaffolding can take various forms that should be provided based on learners' needs. Indeed, scaffolding associated with L2 instruction influences educational progress positively. Research shows that scaffolding also enhances learners' achievement, which increases their confidence as it encourages them to learn how to communicate. Scaffolding has proved to be useful in language learning as it improves the learning process by supporting and protecting learners in real settings. It makes a connection to students' contextual knowledge which improves communication, interactive dialogue, and negotiation among students. The provision of feedback in technology-oriented settings during the learning process improves the quality of learning (Jerry & Niwat, 2013). In the BL context, emerging technologies make an important contribution to the enhancement of how feedback is given. Vygotsky (1978) attached great importance to the role of social interaction and the provision of critical support for effective learning. From this viewpoint, it follows that scaffolding substantially enhances the quality of BL outcomes and learning experiences. Blended leaning-oriented scaffolding has a vital role in education, which enhances students' self-efficacy (Girasoli & Hannafin, 2008). Indeed, technology-oriented scaffolding makes L2 learning easy as such type of scaffolding enables students to enhance their concentration, decreases the level of anxiety, makes it possible for the students to receive prompt feedback, and increases their motivation level.

It would be useful for L2 curriculum developers to focus on a process whereby instructors and learners can engage in close interactions. In such a context, it would be easier to enhance WTC and efficacy by developing proper materials and activities to be presented as a scaffolding strategy. Sociocultural theory is closely related to WTC, in that it attaches importance to the contribution of interaction to creating chances for the students to practically use the L2. Furthermore, this theory emphasizes the contribution of mediation in novice-exert engagement during learning. Therefore, sociocultural theory sheds light on the way in which the expert or the teacher creates opportunities for the learners by providing scaffolding. Indeed, the notion of mediation in this theory provides clarification on how language as a sociocultural tool contributes to the development of teachers' practice within the cultural-historic domain. Moreover, scaffolding fosters learners' ability to draw on their previous knowledge, enabling them to internalize new insights and information.

The findings of this research have the effectiveness of the scaffoldings used in this study. This is because they allowed the participants to enhance their own understanding of the process, which made it easier for them to deal with learning issues. Consequently, the scaffoldings enabled the learners to raise their own understanding and experience related to learning themes, providing them with successful mastery over the learning tasks. Indeed, learning occurred when the learners managed to understand the content knowledge so that they could perform the task independently or gain mastery over the task. Therefore, the attainment of mastery experience as the most important source of self-efficacy enabled the learners to gain confidence in their own abilities. This allowed them to carry out other tasks successfully, as well. It follows that mastery experience can improve learners' self-efficacy. Thanks to the scaffolding, the participants were provided with many opportunities to enrich

their L2 interactions. The learning experiences took place due to the learners' acquisition of content knowledge which enabled them to carry out the task on their own. Therefore, having such a mastery experience which has proved to strengthen one's self-efficacy led to increases in students' confidence so that they could do tasks successfully. The findings of the study might be used by educators seeking to employ scaffolding to develop student learning and self-efficacy in the BL mode.

As the present study has shown, although the scaffolding provided by an instructor can drive the learners to show more WTC in a classroom task, such scaffolding should be consistent with students' present needs, proficiency level, as well as the situation as it ensures its effectiveness and efficiency, so stakeholders should consider this point, as well. In addition, regarding BL-oriented scaffolding, L2 instructors are advised to improve their knowledge of scaffolding and the relevant skills. This is because effective scaffolding entails being cognizant of scaffolding tools and skills. Such a type of awareness and its practice can render a task manageable (Van de Pol et al., 2010). Furthermore, teachers need to be cognizant of the differences among the students. For example, a learner may be too reticent and anxious to display his/her ideas in English, while another learner may be very confident. Therefore, instructors should build a positive and stress-free learning atmosphere, especially for learners who feel anxious and nervous while communicating in L2. This study has important implications for teachers, in that they can serve as a facilitator in the procedure of learning. Notwithstanding the similarities of the values supporting scaffolding in online and in-person learning, scaffolding in online learning entails instructors' ability to shift their role from content presenter to facilitator in learning activities that might be due to the absence of in-person instructor-learner and learner–learner interactions (Dabbagh, 2003). Moreover, using various types of interaction, including group work, whole-class discussion, or individual speaking rather than using only one type can be more useful as it can develop EFL learners' willingness, positive feelings, and self-confidence in communicating in L2.

The outcomes of this research have significant pedagogical implications for learners, in that they can be encouraged to take part actively in online English classes. Indeed, universities should exercise caution when it comes to selecting their online platforms as this platform can promote, raise, and enhance learners' WTC and opportunities in online classes. In other words, these platforms should be tailored to provide learners with equal and enough chances to speak. This study has also important implications for syllabus designers, in the sense that it is recommended that they integrate online scaffolding in their syllabus and curriculum so that teachers would put them to use in L2 classes. Moreover, teacher trainers can achieve their objectives by considering the significant role of the variables covered in this study, namely, self-efficacy, WTC, and scaffolding. To enhance students' self-efficacy, they can make some instructional modifications in teaching practices by holding academic workshops. More specifically, they can equip L2 instructors with strategies to enhance learners' WTC.

The consequences of this study can contribute to the prospective research. Indeed, future studies need to examine various kinds of scaffolding given its functions and mechanisms that deal with the levels of the scaffolding. They also should consider the participants' needs. Additionally, future studies do well to incorporate interviews in their design. This study focused only on teacher scaffolding concerning learners' WTC, while future investigations can use a combination of both instructor and peer scaffolding to shed light on different types of scaffolding. Furthermore, longitudinal case studies can be conducted as these types of

research make it possible for the researchers to track any potential changes in the learners' motivations to learn English. More in-depth studies on a larger scale can improve teaching and learning in the EFL context.

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