Research Article

The Effect of Using Online Metacognitive Strategies Practice on EFL Learners' Vocabulary Achievement: A Blended Approach

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Abstract

This study investigated a new blended approach for enhancing vocabulary achievement. To this end, the project used a convenience sample of 50 intermediate EFL learners ranging from 19-35 years of age from three intact classes studying English translation at university. They were randomly assigned to two groups of 25 students each. In the experimental group, the treatment consisted of providing photos/cartoons related to the sessions' course of instruction on Instagram, with the learners discussing and exploring the meaning of vocabularies via peer scaffolding using metacognitive strategies. The control group followed the syllabus and assigned homework according to the class program. To investigate the vocabulary achievement of the participants, a piloted multiple-choice vocabulary posttest was administered. The results that were analyzed through independent samples T-test revealed that the blended approach could significantly affect the performance of the experimental group. This study has implications not only for teachers, researchers, and syllabus designers but also for EFL learners with unpacking the notion of metacognition and peer scaffolding, proposing an integrated framework that illustrates how it may pervade the teaching-learning process as an educational goal. The implication of this study supports student responsibility, a student-centered classroom, and higher levels of cognition.

Keywords: vocabulary achievement, metacognitive strategies, group study, peer scaffolding, peer tutoring, blended approach

Introduction

Language is a very important means of communication. The acquisition of adequate vocabulary, as a sub-skill of language, is essential for successful second language use and communication. Second language (L2) learners are still encountering issues in improving vocabulary achievement effectively despite numerous studies conducted to introduce the most empowering approach. Yet, vocabulary is rarely taught explicitly in many L2 classes, and learners are usually expected to learn vocabulary through rote memorization without much guidance. Some learners dislike and have difficulty in learning vocabulary on their own; however, they rely on this method without being much aware of other approaches. It seems that, it may be necessary for teachers to teach various vocabulary learning strategies instead of providing students with a list of vocabulary to memorize (Tanaka, 2017). Teaching vocabulary contains presenting, defining terms, explaining. Therefore, teaching vocabulary is a kind of disorganized instruction, without pre-planning and regardless of the activity (Oxford & Scarcella, 1994). If learners could find suitable strategies for themselves and realize that they can learn vocabulary more easily and effectively, their competence might increase which may also lead to a better learning outcome (Tanaka, 2017).

Recent research indicates that many teachers are not sure about the best practice and do not know at times where and how to form an instructional emphasis on vocabulary teaching-learning. This situation may make teaching vocabulary a problematic issue (Berne & Blachowicz, 2008). Therefore, research suggests that teachers should provide learners with systematic L2 vocabulary instruction, help them learn vocabulary through context, instruct them specific strategies for acquiring words, and show students how to learn words outside their L2 classes (Oxford & Scarcella, 1994). Accordingly, learning strategies might be suitable for both classroom learning and self-directed learners (Langfeng & Anokye, 2018).

In the current context of technology-assisted learning, the integration of computer technology into the global communication environment through the use of the Internet benefits teachers as well as learners. This educational setting would provide great opportunities via its visual aids for learners to engage in authentic conversation, expand exposure to the target language, be active participants, foster peer interactions in their classrooms and

throughout the global community (Ghasemi, Hashemi, & Bardine, 2011). Meanwhile, providing an online condition in a language learning environment enables the teacher to transfer more information to a larger number of students in a shorter time; it also causes teachers to change their methods and strategies due to online task-based environments (Balaman & Sert, 2017). In such contexts, language teachers/instructors and applied linguists could promote language learning through vocabulary learning. They take the form of investigation of strategies that function effectively in an online environment that learners could use specifically for vocabulary achievement, which is the so-called an essential part of L2 acquisition (Alqahtani, 2015).

Meanwhile, scaffolding may play an important role to overcome the obstacle of learner's feeling of communication in online environments (Park & Jang, 2008). In such a condition, students are provided with the opportunity to interact and collaborate with their peers synchronously. Researchers have used different types of scaffolding techniques such as peer scaffolding to facilitate learning conceptual items that are constructing new understandings and building knowledge to learners (Jacobson & Azevedo, 2007). Consequently, peer scaffolding techniques as effective language learning strategies consisting of vocabulary achievement have been established variously in online discussion and web-based instruction (Park & Jang, 2008) to develop the skills and knowledge required for future task performance. They also promote both paired and group interaction and collaboration among learners. Feedback has been very positive, as students believe it has engaged them in effective interaction and collaboration with their peers and teachers (Wang, 2014). Peer scaffolding provides support to allow the learner to learn for themselves (Athanassiou, McNett, & Harvey, 2003). In peer tutoring of peer scaffolding mode, peers help to scaffold less competent learners to enhance their comprehension and learning development. Accordingly, the chances of learning increases when they are involved in their learning. In this regard, peer tutoring facilitates problem-solving acts. Similarly, researches have indicated that peers act on the same type of scaffolding as each others' tutor in a teacher-less collaborative decision-making situation (Pata, Lehtinen, & Sarapuu, 2006). So, learners

help and guide each other through peer tutoring until the problem is solved for all of them and learning the new words are learned.

In the meantime, research evidence reveals that metacognition can effectively improve L2 learning (Wenden, 1998). Metacognition allows learners to apply the strategy in use and monitor it, develop awareness into their learning strengths and weaknesses, and use such a vision to progress their learning. Learners make use of metacognitive strategies to organize, monitor, moderate, and evaluate their learning and cognitions process before, during, or after a cognitive task (I. Lee & Mak, 2018). For instance, group study as a kind of metacognitive strategy works as a facilitator of exchanging information and ideas which support peers in a group study review and feedback during an activity. The activities like asking questions, peer tutoring, comparing notes, and brainstorming would lead to success in the learning process. Besides, bloom's taxonomy works as a metacognitive framework for the student-centered class management. It is inferred that Bloom's taxonomy is used as a scaffolding device to support metacognition. The use of the taxonomy will help the classrooms become more learner-centered and self-responsible, help the learners gain increased awareness and control of their cognitive development and learning process (Athanassiou et al., 2003).

The activation of metacognition is particularly effective in peer scaffolding s. It is when learners interact with peers as givers and recipients of feedback, during which metacognition can be developed and take place (Lee & Mak, 2018). In fact, scaffolding fosters metacognition (Azevedo, Moos, Greene, Winters, & Cromley, 2008), and consequently improves learning achievements.

This quantitative research study firstly aimed to enhance L2 learners' vocabulary achievement which results in language learning improvement. To achieve such an objective, this study has implemented language learning strategies such as peer scaffolding as well as group study and bloom's taxonomy metacognitive strategies practices to suggest an effective blended approach. This approach empowers L2 learners to become independent and self-regulated, which is the fundamental goal of education particularly in the 21st century. In this approach, all the features of the mentioned learning strategies are deployed in an online technology-assisted environment or

better said, an online social network namely, Instagram to bring learners a cultivated and enjoyable area of vocabulary learning which has pedagogical implications for teachers and material developers. Accordingly, the following research question was posed: Does online metacognitive strategies practice through peer scaffolding have any significant effect on EFL Learners' vocabulary achievement?

Method

The present study was an attempt to delve into the controversial issues faced by many EFL learners within vocabulary achievement and to see how new researches could find out a solution. Therefore, in this study a blended approach was suggested, using common language learning strategies to improve vocabulary learning. The result of the implementation of this approach on Instagram was compared with the traditional way. Traditional way of teaching vocabulary, that is, the routine assigned homework based on the related course book activities. To achieve the objective of effective vocabulary learning, a quantitative research with a quasi-experimental design was employed. The following sections introduce the steps taken into the investigation. They present the details regarding the participants, instruments, and procedures of this study.

Participants

In this study, the participants were 50 adult EFL freshmen University learners majoring in English Language Translation, including 18 males and 32 females aged 19-35 years at intermediate level. This group was from three Reading Comprehension classes selected through non-random convenience sampling. They all had adequate online social networks literacy. These participants were assigned to two groups: one experimental group and one control group.

The second group was two different teachers who were teaching in the control and experimental groups. The researcher who acted as a teacher assistant was controlling the activities of the both groups and kept records of the groups' progress trends.

The last group of participants was two different professional English teachers who rated listening, reading, and 1st section of writing part of PET. They also rated the two other sections of writing part of the PET test twice.

Instruments

A piloted sample of Preliminary English Test (PET) was administered to ensure the homogeneity of the participants in terms of their language proficiency.

Moreover, Instagram was selected as an available, user-friendly, online social network instrument for implementing the objectives and purposes of the study. This application was equipped with some functions such as polling online, counting the number of votes, calculating the percentage of each vote, keeping records of trends, traces of any modifications, and participants' conversation. This application was used for the pretest and treatment of the study.

In the pretest, the function of polling online on Instagram was used. As it is presented in Figure 1 the voting panel calculated the percentage of familiar or unfamiliar vocabulary, and this was a kind of online voting due to the fact that the option permits each user or account only one chance of voting within 24 hours. Before the treatment, the participants were instructed to take part in voting vocabularies. They were supposed to specify whether the words of each slide were known to them (YES), or unknown to them (NO). These vocabularies were set up according to the course of instruction in the number of 60 items. They were among the target vocabularies of each chapter of the coursebook. This Polling was to determine which vocabulary items were quite unknown for the participants of both the experimental and control groups to work and focus on during the treatment.
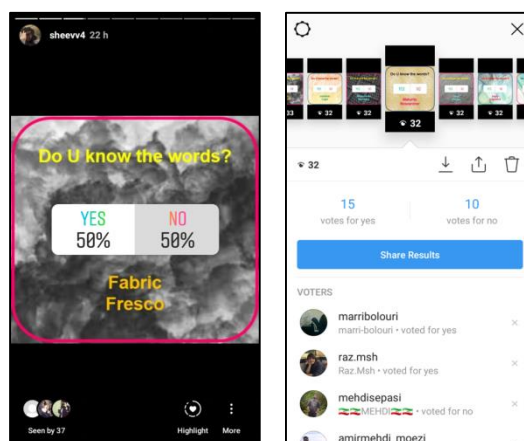
Figure1. Polling Online Function on Instagram

Before beginning the treatment, 20 well known common words among 60 initial words, which were familiar for more than 68% of the participants, were removed. Consequently, the 40-item word list could be used as the treatment material of the experimental group and control group during their semester. By creating a communication atmosphere in the online network environment and higher information transfer through Instagram, this application was used in the treatment phase. Figure 2 represents the function of commenting on posts on Instagram which was used for peer interactions and communication. It was decided beforehand to have 30-minute online treatment for each class session of the experimental group resembling the required dedicated time for control group treatment.
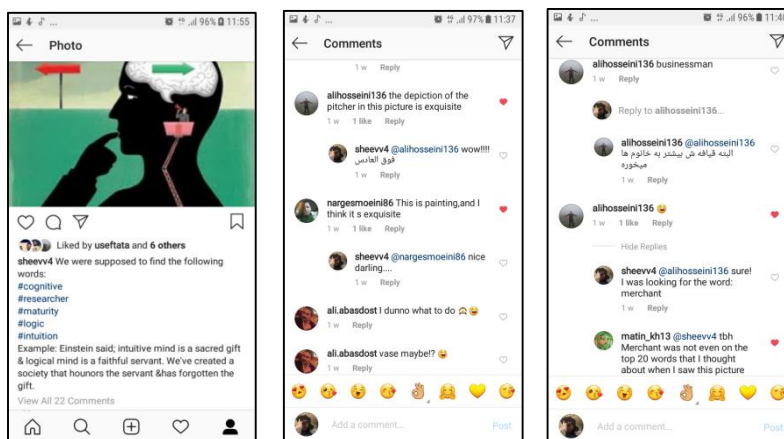
Figure2. Commenting on posts on Instagram

The other instrument was a researcher-made 40-item vocabulary multiple-choice test. The 40 unknown vocabularies identified from the initial 60-item vocabularies by polling online on Instagram, through which the experimental and control groups did not show mastery over, were tested at the posttest. This 40-item multiple-choice vocabulary posttest was compiled from available standard tests on the internet since 2016. It was administered in the very last session of both experimental and control groups when all the assigned syllabus sessions were fully covered.

The course selected in this study was the reading comprehension course since one of the objectives of the course was vocabulary achievement. Also, the blurb of the course books said that they were emphasizing vocabulary which equips students with the tools to acquire new words. Therefore, it probably facilitates reaching the main goal of the study.

In both experimental and control groups the two following course books were covered:

a) Interactions 2 Reading, Sixth Edition by Pamela Hartmann and Elaine Kirn, published by McGraw-Hill ESL/ELT(2013). Three chapters (8-10) of this book were covered during the semester.

b) Mosaic 1 Reading, Sixth Edition by Brenda Wegmann and Miki Knezevic, published by McGraw-Hill ESL/ELT (2013). Three chapters (1-3) of this book were covered during the semester.

Procedure

As the first step, 50 EFL learners from intact classes were homogenized by using a piloted sample PET in terms of their English language proficiency at the beginning of the study. Then they were randomly assigned to two groups of 25 students in the experimental group and control group.

The major activities which were conducted in the experimental and control groups were almost the same. The so called treatment was conducted outside the classroom for both groups. In this study, the experimental group was practicing the blended approach, that is, two metacognitive strategies - group study and bloom's taxonomy- alongside peer tutoring on Instagram as an online social network. The participants were not aware of practicing these language learning strategies.

The blended approach was implemented during 30-minute online treatment sessions consisting of 12 sessions held in 6 weeks. In each session, two or three photos /cartoons gathered from internet search engines such as google.com or msn.com were posted. Each post included new vocabularies based on the designed syllabus and the assigned chapter of the course book. The area of vocabularies and concepts were identified by some relevant words, questions, and excretions using a hashtag (#) in the caption of each post. For example, the participants were supposed to guess the word "Incorporation" regarding the posted photo/cartoon. The area of this word was mentioned by the following vocabularies in the caption: "# take part, # attend". The participants were supposed to guess the word without Googling or using a dictionary. They had to guess the word only by following the instruction fully emphasized based on the blended approach strategies practices before each session. The instruction was in compliance with the introduced strategies and the blurb of the coursebook which claimed to help the students learn words in groups/categories like words with the same stem, words with similar meanings, words with opposite meanings, etc. The instruction consisted of:

a) Practices of Bloom's taxonomy which contained asking learners to criticize each other's statements and discuss the subject matter which caused breaking the silence among learners. In doing so, it addresses

the common problem of most learners: How to figure out what it is one does not know. This condition leads to controlling the learning process, empower students' management as self-responsible learners, develop the complexity of their skills, fortify aspects of higher-order thinking, and to better understand the behaviors that constitute critical thinking. In a broader term, the use of the taxonomy helps the classrooms become more learner-centered, it also helps the learners gain increased awareness and control of their cognitive development (Athanassiou et al., 2003).

b) The group study practices which contained peers' feedback to each other during the activity to facilitate exchanging the information. Actually, joining in a study group leads to success in the learning process and reduces worries and enhances participation during the performance of a task. The other activities of this strategy are: asking questions, peer teaching each other concepts, comparing notes, and brainstorming (Athanassiou et al., 2003).

c) The peer tutoring of peer scaffolding helps peers have an influence on one another through which they try to facilitate decision-making and initiate elaboration. These activities must continue until the provided concept becomes clear for all of them. Common types of this strategy are: Allow the learner to learn for themselves, be involved in learning, help scaffold less competent learners to enhance their comprehension and learning development, and increase chances of learning. Through these activities, peers helped to scaffold less competent learners to enhance their comprehension and learning development (Pata et al., 2006).

As mentioned earlier, the basis of the blended approach aimed to help to promote the chances of learning words in the group by providing a friendly, facile, and online environment through brainstorming, feedback, commenting on comments of others, and asking questions. Besides, being involved in learning, helping and guiding each other, explaining their understanding, and having discussion opportunities were continued among peers until the provided concept became clear for all of the learners. The process had to go on until the learners could provide a fine definition of the new words, or guess the new words, be able to share the new vocabularies,

and finally learn the new words in practice. Therefore, the learners were actively engaged in their teaching and learning vocabularies with the goal of higher vocabulary achievement. The researcher navigated students to complete the task. It was the researcher and active participants' responsibility to encourage all the learners even inactive ones to participate until the task was completed. Finally, the participants were invited to make a sentence as an example out of the newly introduced words to stabilize the word in mind.

Meanwhile, the 25-member control group after each class session practiced newly taught vocabularies in the assigned routine homework later at home. They focused on the coursebook activities in accordance with the blurbs and objectives of the book - like reviewing vocabulary, cloze test, and having discussions over course book photos – which were selected as treatment and were supposed to be performed after the class sessions. The control group activities were supposed to take 30 minutes for each class session. So, the dedicated time outside the classroom for the experimental and control groups was in compliance with each other. Practically, the two groups of learners received the same extra time treatment.

In the end, the vocabulary posttest was administered containing 40-item multiple-choice vocabulary items in the very last session of both experimental and control groups when all the assigned sessions were fully covered and the EFL learners were familiar with all the initially determined unknown words.

Results

The research question sought to investigate the extent to which online metacognitive strategy practice based on the blended approach could affect EFL Learners' vocabulary achievement. In this regard, the following steps were taken to reach the goal namely, piloting proficiency test (PET), administering PET, piloting vocabulary posttest, and finally the investigation of the research hypothesis through inferential statistical procedures by examining the posttest vocabulary achievement scores. To this end, version 16.0 of the SPSS application was utilized.

Descriptive Statistics

In order to investigate the reliability of the PET required for proficiency level measurement of the main participants, it was piloted before being used as a tool of measurement in the study. Twenty-five EFL learners sharing the main characteristics of the study's target participants were selected for piloting PET. In the very first phase, descriptive statistics of total piloted PET were analyzed. Table 1 shows the statistics.

Table 1
Descriptive Statistics of Total Piloted PET Test

	N	Range	Minimum	Maximum	Mean		Std. Deviation	Variance	Skewness	
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic	Statistic	Std. Error
PET pilot total	25	49.50	20.00	69.50	43.4200	2.90699	14.53493	211.264	-.014	.464
Valid N (listwise)	25									

As illustrated in Table 1, the skewness is in the acceptable range of -1.96<statistic/Std. Error<+1.96. The skewness of -0.014 shows a normal distribution and the applicability to use Parametric Statistics.

Finally, the reliability of the piloted PET was analyzed as shown in Table 2.

Table 2
Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.915	.913	65

The index of 0.913 (Table 2) which was calculated via Cronbach's Alpha formula shows significant high reliability for the piloted PET test.

In order to have a general picture of the data in this study, a descriptive analysis was performed on the participants' PET scores in order to appraise homogeneity among the participants. As Table 3 shows, the mean scores of learners in both the experimental and control group was almost the same.

Table 3

Descriptive Statistics of Experimental and Control Groups

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance	Skewness	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error
Control group	25	30.00	23.00	53.00	37.1000	9.17537	84.188	.183	.464
Experimental group	25	30.00	23.00	53.00	37.6000	8.55253	73.146	.161	.464

As a result of having normal distributions in both groups, an independent samples T-Test was run to investigate the homogeneity of the groups. The result can be seen in Table 4.

Table 4

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Total PET	**Equal variances assumed**	.400	.530	-.199	48	.843	-.50000	2.50865	-5.54398	4.54398
	Equal variances not assumed			-.199	47.765	.843	-.50000	2.50865	-5.54462	4.54462

Table 4 depicts that with an F=.400, and *p*=.530>.05, equal variances were assumed and according to the first row, (t=-.199, df= 48, *p* =.843>.05), there was no significant difference between the experimental and control groups. Therefore, the two groups proved to be homogenous before the treatment.

The sample EFL learners' vocabulary achievement was analyzed by a vocabulary posttest. More specifically, the reliability and descriptive analyses were performed to compare the scores of the learners' vocabulary achievement based on the blended approach on Instagram with the scores of those based on the traditional approach.

In order to estimate the consistency of the researcher-made 40-item vocabulary multiple-choice posttest, a reliability analysis was performed (Table 5). This test was administered to a sample of 36 students sharing the characteristics of the main study's participants.

Table 5
Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.922	.921	40

The results in Table 5 illustrate the reliability of the piloted posttest with the index of reliability calculated through Cronbach's Alpha formula equal to 0.921, which is significantly high. Table 6 also shows the results of the item statistics.

Table 6
 Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	.562	.265	.912	.647	3.444	.024	40
Item Variances	.230	.083	.258	.175	3.108	.002	40
Inter-Item Covariances	.052	-.091	.184	.275	-2.020	.002	40
Inter-Item Correlations	.225	-.387	.751	1.138	-1.939	.039	40

The descriptive statistics of the control and experimental groups on the vocabulary posttest revealed normal distributions. So, using an independent samples T-Test analysis as shown in Table 7 was legitimized in order to investigate and measure any difference between the experimental and control groups.

Table 7
Independent Samples Test

| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | 95% Confidence Interval of the Difference | |
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
VOC total	**Equal variances assumed**	.686	.412	5.175	48	.000	9.72000	1.87812	5.94379	13.49621
	Equal variances not assumed			5.175	46.512	.000	9.72000	1.87812	5.94067	13.49933

A comparison of the total scores of vocabulary posttest between the experimental group experiencing the blended approach on Instagram and the control group experiencing the traditional approach in Table 7 shows that there was a significant difference between the two groups. As indicated in Table 7 the obtained data calculated via the independent samples T-Test with an F=0.686 and *p*=0.412>0.05 assured the equal variances and therefore the first row of the data was considered. Hence, the effectiveness of the blended approach, using online metacognitive strategies practice through peer scaffolding, on vocabulary achievement is justified, t=5.175, p= 0.000<0.05.

Discussion

Although vocabulary learning was neglected for many decades, during the 80s it became a 'hot' topic for researchers. Since lexical knowledge has a pivotal role in language acquisition, lack of vocabulary knowledge could impede language learning (Alqahtani, 2015). Having difficulty in finding out an appropriate vocabulary learning practice (Langfeng & Anokye, 2018), which has been experienced by not only EFL learners but also by many teachers (Alqahtani, 2015; Berne & Blachowicz, 2008), made the researchers investigate this subject matter.

Since students' age, gender, mood, orientation, level, hours, and time of education as well as English proficiency and familiarity with the applied tools, etc. may affect language learning; teachers need to be aware of these differences when applying teaching techniques and vocabulary learning strategies. These applied techniques and strategies may mobilize learners with the extent of vocabulary achievement that makes them prepared in recalling words while encountering them in a complex context. In addition to common techniques which are used for presenting new vocabularies and vocabulary learning strategies, along with other specific techniques suggested by experts which are claimed to be helpful for students to learn vocabulary easily and quickly, teachers usually combine more than one technique in presenting a vocabulary item, instead of employing one single technique (Alqahtani, 2015). In this regard, the objective that this study sought was a better way to teach and learn vocabulary leading to enhancing vocabulary achievement by developing the blended approach via common practices and strategies. The results of this intervention were compared with the results of the traditional approach which showed significant difference.

According to the findings the role of teachers in combining more than one technique in presenting one vocabulary item, and introducing the word in various, multidimensional, and figurative contexts instead of employing one single technique cannot be ignored in eliminating the problems of learning vocabulary. This is most apparent as the advent of technology has both changed the learning channels of the learners and has simultaneously brought forward a plethora of facilities to change the face of education notwithstanding the fact that it is the future of pedagogy. It seems that just relying on rote memorization, repetition or drilling of the words, and

previous vocabulary learning strategies cannot lead to a valid and accurate solution because the problem still remains despite many studies that have been conducted (Alqahtani, 2015).

The main purpose of this study was to recommend the blended approach utilizing multiple techniques developed under the light of common practices and strategies. In fact, the researcher sought a better way to teach and learn vocabulary leading to better achievement in different contexts which is in line with recent scholars' findings. First, online social network as a common daily use tool was applied to facilitate learning trends and develop a learning environment in a simple daily process (Seiz-Ortiz, Gimeno-Sanz, & Siqueira, 2011). Second, peer scaffolding was employed as a welcomed and beneficial leaning environment (Rahmani, Abbas, & Alahyarizadeh, 2013), considered as a useful tool of learner interaction and feedback, plus acting as a device to support metacognition (Athanassiou et al., 2003). Third, metacognitive strategies were applied as a language learning booster (Molenaar, van Boxtel, & Sleegers, 2010), supporting learning tools (Athanassiou et al., 2003), and probably vocabulary learning enhancement (Lee & Mak, 2018).

As a result, the experimental group learners applied features of the language learning strategies in the blended approach to recall their knowledge and background in order to guess the word and to grasp what they had already missed in their work. Participants responded positively to Bloom's taxonomy of metacognitive development. Descriptive statistics done in this research supported the idea of the integrative approach to develop language learning skills. The repeated emphasis on metacognition and peer scaffolding concepts over the entire semester had similar positive and significant effects. The use of metacognition practices provides students with a practical tool by which to evaluate their performance and understand what behaviors indicate that higher-order cognition is occurring. In this regard, the learners were supported to determine the level of their work and were empowered to self-analyze and increase their thinking level. Additionally, the fact that the peer scaffolding practices seemed interesting and new to the learners of the study may confirm the positive effect of this approach. Therefore, the class performance improved and learners

responded positively to Bloom's taxonomy' emphasis after early steps and kept the same trend forward. However, it might be inferred that this effect might not sustain over time due to Athanassiou et al. (2003) report of decreasing performance of learners on Bloom's scale between the first and the second observation which was explained as learning effect.

In the present study, the quantity of vocabulary learning achievement and word knowledge between the control group who received routine instruction and the experimental group who received peer tutoring of peer scaffolding plus group study and Bloom's taxonomy of metacognitive practices in the social network online environment of Instagram, known as the blended approach, were compared. The results revealed that more interaction among learners through contributing, tutoring, and giving feedback to each other could lead to more cognitive learning outcomes which might also increase the development and expansion of metacognitive knowledge in groups. This supported them to actualize words and concepts which led to learn words and proceed with their lexical developments. As a matter of fact, the researcher used metacognitive practices to probably enhance vocabulary learning. The interaction around metacognitive activities and peer scaffolding could lead to positive learning results.

This study has unpacked the notion of metacognition, proposed an integrated framework that illustrates how it may pervade the teaching–learning process, and provided the implementation of this blended approach in the classroom with an example. This study does provide preliminary evidence that students can be encouraged to think at higher levels of cognition by using the metacognition and peer scaffolding, therefore benefiting learners to have a more in-depth processing especially in an online format that nowadays appeals to many individuals. In summary, despite the limitations, the main conclusion of this study is that metacognitive practices through peer scaffolding in an online environment of Instagram are successfully effective.

The amount of interaction among learners using metacognitive activities and peer scaffolding could lead to different learning results which can not only be useful for English teachers in the classroom but also to the Ministry of Education, especially to language planners in their decision-making. The present study also contributed to the research literature in the field of foreign

language acquisition. It can be beneficial to learners to hone their skills in working with the modern technology which is undeniably favored by many in this time and age. Also material developers can incorporate such blended approaches taking advantage of the accessibility and omnipresence of mobile phone and social media platforms.

With the growth of online education in recent years, the role of technology as a resource for foreign language learning is increasing. Internet has become a prevailing, interactive, and instructional media which embraces rich resources, a wide range of information, dynamic interaction, and communication technology (Lipponen, Rahikainen, Lallimo, & Hakkarainen, 2003). This results in collaborative, meaningful, and cross-cultural human interactions among members of a discourse community (Lee, 2004). Also, Computer technology could increase language learners' self-esteem, vocational preparedness, language proficiency via its visual aids through vocabulary acquisition, and overall academic skills. These technologies benefit the teachers as well as students would provide great opportunities to engage in authentic conversation, expand their exposure to target language, and also promotes students' equal participation in the classroom. The integration of computer technology into the Internet has the potential to transform the students from passive recipients of information into active participants. Thus, learners have an opportunity to monitor their own language production and learn from others' language (Ghasemi et al., 2011).

Since the small, specific size of participants could be considered as a kind of limitation of this study, the reader should take caution in generalizing the presented results because there are inherent differences in skills, metacognitive knowledge, and status in different individuals. Furthermore, the strategies occurring in the experimental group were not verbalized and introduced to the participants. Hence, it could be argued that some implicit metacognitive activities which are by no means explicit lead to the occurrence of higher cognition.

The current study might be replicated with larger classes and population diversity in gender and age to make the work useful in a practical way and powerful in statistics to measure the effects of the work. Since data record-

keeping and providing attractive and diverse photos/cartoons were time-consuming and required accuracy and patience in further studies, a professional group of teachers/researchers should work on it to save time. Finally, another study can be carried out to implement metacognitively scaffolded learning vocabulary for younger L2 learners at the primary and/or secondary level.

Declaration of interest: none

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