The Sociological Effects of Peer/ Teacher Technology-Enhanced Scaffolding through Process Approach on Young Male vs. Female EFL Learners' Vocabulary Knowledge

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Abstract

Gender is considered a sociological construct and investigating the role of gender in foreign language learning contexts is highly important due to the effects of sociological factors in learning. Therefore, the present study set out to explore the sociological effects of peer and teacher scaffolding through the process approach in a technology-enhanced environment on the vocabulary learning of male and female EFL learners. The participants of the study were 120 EFL learners at the intermediate level of language proficiency who were selected out of 170 learners based on their performance on the Oxford Placement Test (OPT). The selected 120 learners were divided into three groups consisting of both male and female learners. The three groups were then given a vocabulary pretest. Then, treatment was carried out via Telegram in line with the tenets of process approach as explicated by Nation (2001) including the three stages of noticing, retrieval and generation. It should be noted that the treatment in both peer and teacher scaffolding groups was done based on Nation's three stages. The difference was that scaffolding in peer scaffolding group was carried out by peers while scaffolding in teacher scaffolding group was conducted by teacher. Concerning the control group, the conventional instruction of vocabulary was followed via providing the learners with example sentences and also vocabulary exercises, and no specific steps were followed for providing the participants with peer or teacher scaffolding via a process approach. After finishing treatment, the three groups were given the vocabulary posttest. The results indicated that both teacher and peer scaffolding significantly affected learners' vocabulary improvement irrespective of gender.

Keywords: Scaffolding, Vocabulary acquisition, Process approach, Gender.

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1. Introduction

There is general consensus that people are born with a sex and a gender (Söylemez, 2010), associated with roles and functions assigned by culture and society (Chen & Rao, 2011). As Chen and Rao (2011) maintain, gender is defined in two different but indispensably connected ways. In the first, gender refers to the biological characteristics of males and females. In this sense, gender is basically considered as a biological construct and it is interchangeable with sex. In the second, gender refers to the behavioral, cultural, or psychological traits typically associated with one sex. In this latter sense, gender is a social construct. In fact, as a social construct, gender identity is formed as individuals undergo socialization developments through social and culture norms (Chen & Rao, 2011). Thus, gender as a social construct should be viewed from a sociological perspective. Previous research findings (e.g., Bailey, Onwuegbuzie, & Daly, 2000; Jiang, 2013; Zafar & Meenakshi, 2012) have confirmed the significant role of gender in L2 learning. The results of some studies (e.g., Qian, 2015) have revealed that in terms of the socialization process, females display stronger desire to conform to social structures and norms. In a strand of studies (e.g., Green & Oxford, 1995) particular gender differences have been reported. For example, it has been reported that females are more frequent users of language learning strategies females rely more significantly on social strategies compared with males. As Green and Oxford (1995) note, female learners have been shown to be more socially oriented than males. Some studies (e.g., Ansari & Sabouri, 2016; Nikolovska, 2010) have reported differences between male and female EFL learners in terms of vocabulary learning strategies. In a study by Ansari and Sabouri (2016), it was revealed that female learners used psycholinguistic and metacognitive strategies more compared with female learners. However, there was no significant difference between Iranian male and female EFL learners in terms of the use of vocabulary learning strategies. Nikolovska's (2010) findings revealed that, in general, female learners used vocabulary learning strategies more in comparison with their male counterparts.

Vocabulary is regarded as the most crucial constituent of language. As Walters (2004) notes, vocabulary lies at the heart of language. In a similar vein,

Celce–Murcia and Rosensweig (1989) maintain that educators and teachers should view vocabulary as an essential component in the instruction of second language from the very beginning stages. Likewise, Krashen (1989) holds that vocabulary is one of the main building blocks of language, and its role in language learning is pivotal. Obviously, communication with others would be impossible without vocabulary knowledge. Thus, vocabulary learning should be considered as the basis of language since vocabulary learning is the first stage in the acquisition of communication skills. A look at the previous studies (e.g., Agustín-Llach, 2015; Alipour, Madarsara, Youhanaee, & Barati, 2015; Arast, &Gorjian, 2016; Ertürk, 2016; Ghanbari, & Marzban, 2014) shows that many scholars view vocabulary as the most important element in first language (L1) and second language (L2) teaching and learning. When it comes to learning English as a foreign/second language, learners' knowledge of words is one of the most important parameters, significantly influencing learners' performance in L2 learning. Thus, learners with inadequate knowledge of vocabulary will experience difficulties and challenges to figure out the written and oral language. According to Thornbury (2002), L2 learners should acquire an adequate repertoire of words and be able to recall them as well.

Multiple approaches have been proposed to enhance language learning in general and vocabulary learning in particular. The process approach to vocabulary learning is one of these approaches. Process approach to learning emphasizes the learning processes learners should undergo in order to achieve learning objectives (Swain & Lapkin, 1995). Emphasizing the effectiveness of process approach to vocabulary teaching and learning, Crossley, Salsbury, and McNamara (2009) contend that teaching vocabulary via the process approach holds the potential to enhancing an increased awareness for vocabulary learning which can ultimately lead to better vocabulary production. In a similar vein, highlighting the importance of process approach to vocabulary learning, Hulstijn (2001) maintains that a process approach to vocabulary is highly likely to improve vocabulary learning and retention as a process approach is rooted in information processing which entails effective processing. Underscoring the significance of a process approach to vocabulary teaching, Bolger and Zapata (2011) note that when L2 are engaged in activities

which trigger deeper processing, they learn vocabulary more effectively compared with merely being exposed to lists of words. The findings of a study by Radwen and Boyer (2011) revealed that semantic processing as a process approach to vocabulary teaching led to the improvement of vocabulary among adult English as a second language (ESL).

Process approach to vocabulary learning views vocabulary learning from the perspective of stages through which a learner passes to learn vocabulary (Wu, 2011). Nation (2001) has mentioned three processes for learning vocabulary: noticing, retrieving and generating. The noticing stage is the first stage where L2 learners should be conscious of the target word they intend to learn. In this stage, explicit attention should be paid to the new words. In the retrieval stage, learners can remember the vocabulary items as well as their meaning during reading and listening. In the last stage, namely, generative stage learners need to make practical use of words to express meaning (Nation, 2001). Apparently, the context in which vocabulary learning and teaching take place can influence vocabulary learning and retention (Bolger & Zapata, 2011). Using a technologically enhanced environment can be named as one of the frequently used contexts when it comes to language learning in general and vocabulary learning in particular (Ghobadi & Taki, 2018).

Nowadays, the world is replete with technological devices such as computers and mobile phones (Bouhnik & Deshen, 2014). The accessibility of mobile phones has given rise to the emergence and employment of social media for educational purposes (Ebrahimi, Hajebrahimi, Nikfallah, Sari-Motlagh & Shakiba, 2016). Social media refers to "a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0 and that allow the creation and exchange of user-generated content" (Kaplan & Haenlein, 2010, p. 61). Telegram is a "web-based application" launched in 2013 (Ghobadi & Taki, 2018, p. 140). As Mashhadi Heidar and Kaviani (2016) note, Telegram is used more frequently compared with other social networks since it is more accessible and user-friendly. So far several investigations have been conducted investigating the effects of using Telegram on vocabulary in the Iranian context of English as a foreign language (EFL) learning. For example, the results of a study by Ghobadi and Taki (2018)

indicated that the use of Telegram stickers made a significant impact on learning vocabulary. In a similar vein, the results of Heidari Tabrizi and Onvani's (2017) investigation indicated that the use of Telegram had a significantly positive impact on learning vocabulary compared to conventional vocabulary learning. Similarly, Ghaemi and Seyed Golshan (2017) showed that the use of Telegram improved Iranian EFL learners' vocabulary learning. Concerning the international context of English language teaching (ELT), the results of some studies (e.g., Brown, Castellano, Hughes, & Worth, 2012; Khaddage & Lattemann, 2013) have indicated that learners have positive attitudes toward using social media applications in learning English. Quite relevant to the present study, Mansouri and Mashhadi Heidar (2019) sought to explore the impact of peer and teacher scaffolding through process approach in a technology-enhanced environment on vocabulary learning among high and low self-regulated learners. The results revealed that both peer and teacher scaffolding significantly improved vocabulary learning. However, no significant difference was found between peer and teacher scaffolding in terms of their effects on vocabulary learning. Moreover, the results showed that the main effect of treatment on vocabulary learning was significant; however, no statistically significant difference was found between the effects of the two treatment modalities on students' vocabulary learning. The present study and the one published by Mansouri and Mashhadi Heidar (2019) are in fact part of a Ph.D. dissertation.

   Along with the processes used by learners, more attention should be paid to the ways in which such processes can be supported to assist L2 learners in vocabulary learning. According to Vygotsky (1978), one way to support individuals in the learning process is through scaffolding. Scaffolding serves to fill the distance between what children (learners) should learn and what they have already known. Specifically, the Zone of Proximal Development (ZPD) has been used by Vygotsky to account for this gap in knowledge. As Vygotsky (1978) notes, ZPD refers to the gap between the current level of development which is measured by the individual's independent problem solving and the level of potential development which is determined by problem solving under the supervision or guidance of an adult or in cooperation with a more capable

friend or peer. Put it another way, the ZPD is concerned with a set of functions that have not been fully activated and are undergoing the process of maturation. These functions will become fully active in the future and are now in their potential state (Vygotsky, 1978). In order to bridge the gap between the current status of knowledge and target status of knowledge, some kind of mediational strategy is required. This mediation can be in the form of interaction between the learner and more knowledgeable interlocutors which is conventionally referred to as scaffolding in Vygotskian terminologies. ZPD falls within the sociocultural theory (SCT). The main foundation of SCT is constructivism which is a theory stipulating that humans create knowledge and meaning while they engage in interactions among themselves, as well as interactions between their experiences and ideas (Lantolf & Thorne, 2006).

Based on sociocultural theory (SCT), higher forms of mental activity transpire via mediation (Lantolf, 2000). More specifically, SCT explains how mediated minds are developed out of social activity. In a similar vein, as Ellis (2008, p. 524) notes, "SCT seeks to explain how mediated minds are developed out of particular communities. It is through this social activity that genetically endowed capacities are modified and recognized into higher forms". Highlighting the same point, Xiaoxiao and Yan (2010) maintain that SCT as the foundation of scaffolding and ZPD is a theory of higher mental functions which offers a framework through which cognition can be systematically investigated without isolating it from social context. The results of previous studies (e.g., Ahmadi Safa & Rozati, 2016; Amiri Samani& Khazayie, 2017; Khajeh Khosravi, 2017; Khodamoradi, Iravani & Jafarigohar, 2013) have corroborated the effectiveness of scaffolding in terms of different language skills and components. For instance, Ahmadi Safa and Rozati's (2016) results revealed that scaffolding had a significantly positive impact on EFL learners' listening comprehension development. Similarly, the results of Amiri Samani and Khazayie's (2017) investigation showed that scaffolding significantly contributed to low-intermediate adult EFL learners' writing performance. Likewise, Khajeh Khosravi's (2017) findings showed that scaffolding significantly improved reading comprehension of Iranian EFL learners. Moreover, Khodamoradi, et al. (2013) in their study showed that the learners

who received assistance either from the teacher or collaborated with more capable classroom partners had significantly better language performance compared with those who did not receive scaffolding from the teacher or more capable peers.

Effective instruction of vocabulary entails more empirical research findings regarding vocabulary learning process as well as shedding light on how the process approach to learning vocabulary influences L2 learners' vocabulary knowledge. A review of the literature indicates that the process approach has been essentially associated with writing. Accordingly, many studies (e.g., Van Waes, Weijen, & Leijten, 2014; Xiaoxiao & Yan, 2010) have been carried out on the writing process. Yet, the review of these studies reveals that the vocabulary learning process has not been adequately dealt with as existing research on vocabulary learning process focuses mainly on vocabulary learning strategies (e.g., Jiang, 2000; Schmitt, 2010). Moreover, the results of the previous studies on vocabulary learning and teaching (e.g., Agustín-Llach, 2015; Alipour, et al. 2015; Arast, & Gorjian, 2016; Ertürk, 2016; Ghanbari, & Marzban, 2014), scaffolding(e.g., Ahmadi Safa & Rozati, 2016; Amiri Samani & Khazayie, 2017; Khajeh Khosravi, 2017; Khodamoradi, et al.2013), process-based language teaching and gender (e.g., Bailey, et al.2000; Jiang, 2013; Zafar & Meenakshi, 2012)indicates, to date, to the best knowledge of researchers, no study has investigated the effects of peer/ teacher technology-enhanced scaffolding through process approach on male vs. female EFL learners' vocabulary knowledge. In other words, the interplay of the vocabulary learning, scaffolding and gender in a technology-enhanced environment has been left unexamined in the previous literature which holds the potential to contribute to the field of EFL. Thus, to fill the gap in the existing literature the following research question was formulated:

RQ: Is there any significant difference between the sociological effects of peer and teacher scaffolding through process approach in a technology-enhanced environment on the vocabulary learning of young male and female EFL learners?

2. Materials and Methods

2.1. Participants

Initially, a total number of 170 intermediate learners in a language institute in Chalous were selected based on convenience sampling to participate in the current study. Convenience sampling was used as it was not feasible to select participants in a pure randomized manner since the institute regulations did not let the researchers adopt pure random sampling procedures. Moreover, the learners themselves were not willing to change class hours, classes or attend classes based on the strict arrangements which would be set in line with pure randomized procedures. These initial 170 participants were given Oxford Placement Test (OPT) the results of which were used to choose a homogenized sample of participants who were at the intermediate level of language proficiency. To this aim, the descriptive statistics of the OPT scores were computed and 120 students were selected as the study sample. The selected learners' scores were within the range of 28 to 36 which are considered intermediate based on the guidelines of the proficiency test. Afterwards, they were divided into three groups; peer scaffolding, teacher scaffolding and control group each consisting of 40 learners. In total, there were 46 male and 74 female learners. Out of the 46 male learners 16 were in the peer scaffolding group, 18 in the teacher scaffolding group and the remaining 12 were in the control group. As for the female participants, 24 were in the peer scaffolding group, 22 in the teacher scaffolding group and the 28 were in the control group. The participants were all native speakers of Persian who participated in general English classes at the University. Their age approximately ranged from 10 to 12.

2.2. Assessments and Measures

To address the objectives of the present study, the following instruments and materials were used:

2.2.1. Oxford Placement Test (OPT)

At the beginning of the study, OPT was administered in order to ensure the participants' homogeneity in terms of English language proficiency. Oxford Placement Test (OPT) (Edwards, 2009), as a proficiency test, contains 60 items

which test the English learners' proficiency. According to Edwards (2009), the 60-item test measures EFL learners' vocabulary and grammar knowledge and the scores are used to place learners at various proficiency levels. The participants' performances were measured through their scores which showed their level of language proficiency from beginners to high advanced as follows: 1-17 (Beginner), 18-27 (Elementary), 28-36 (intermediate), 37-47 (Upper-intermediate), 48-55 (Advanced) 56-60 (high advanced).

2.2.2. Vocabulary Pretest and Posttest

In order to measure vocabulary knowledge of the participants, a vocabulary placement test developed by Cambridge University Press (2005) was utilized both before and after treatment. The test contained 208 items determining the vocabulary knowledge of the participants from elementary to advanced level. Respondents needed to respond to all the items and they just continued to the extent they could and knew the words. In order to use a reliable test in the study, it was first piloted on a number of 30 participants with similar characteristics to those of the actual participants. Then Cronbach's alpha was employed to estimate internal consistency of vocabulary test as an index of reliability. The results of Cronbach's alpha indicated that the vocabulary test had a reliability index of 0.82 which is considered satisfactory. As for content validity, the content of the test was in line with the instructional content since the researchers used English Vocabulary in Use book series based on which the test items had been developed by Cambridge University Press (2005). Moreover, the content of the test was also checked by two Ph.D. holders in the field of TEFL in an attempt to make some revisions on the items. However, they both confirmed that the test had an acceptable level of content validity and thus no changes were made to the test stems and their respective responses. Since the posttest was a parallel version of the pretest, the researchers changed the ordering of the item responses to minimize practice effect.

2.3. List of Words for Instruction

In order to teach the target words based on peer/teacher scaffolding through process approach, a list of target words was prepared. This list was prepared

based on students' responses to the items of a vocabulary test developed by Cambridge University Press (2005) (See Appendix A for a sample of items). To do so, item facility index was calculated and items which were wrongly responded by ninety percent or more of the participants were chosen for instruction. Via this procedure, 137 vocabulary items were selected out of the initial 208 items. This test was the original test and given to the participants to select the items for the pretest and posttest of vocabulary. To control for test wiseness arising from the practice effect of taking the test, the researchers used two parallel versions for the pretest and posttest of vocabulary. To do so, the researchers changed the order of the test items and choices as well as the test stems.

2.4. Procedure

After the administration of the OPT, the 120 selected learners were divided into three groups as specified in the participants' section. Following that, a vocabulary pretest was given to the three groups; peer scaffolding group, teacher scaffolding group and the control group. Then, treatment was carried out via Telegram in congruence with the tenets of process approach as explicated by Nation (2001) including the three stages of noticing, retrieval and generation. As for noticing, in the present study, the learners were exposed to bold-faced vocabulary items and the words were posted on Telegram. Concerning the retrieval stage, the sentences with the target words missing were posted on Telegram. The scaffolder had access to the Internet and was able to find sample sentences containing the target words. The learner-scaffolders were asked to leave out the target words and post the sentences via Telegram app to the other peer. The scaffolder was also instructed to find pictures which represented the target words and post them on Telegram to help with the retrieval stage. As for the generative stage the learner was required to employ various generative strategies such as mnemonic strategies and visualizations to consolidate the target words and use them productively. The generative stage was practiced by instructing the learners to provide their partner with a target vocabulary item and asking the partner to either send over a sentence in which the word has been used, or a picture which represents the

word under instruction via Telegram. The teacher trained learners on how to provide scaffolding on three sample target words for the whole class using Telegram and one of the learners as a peer. It should be noted that the treatment in both peer and teacher scaffolding groups was done based on Nation's three stages. The difference between the peer and teacher scaffolding groups was that scaffolding in peer scaffolding group was carried out by peers while scaffolding in teacher scaffolding group was conducted by teacher. In fact, in the teacher scaffolding group, all the vocabulary items and the respective scaffolding was delivered by the teacher. Concerning the control group, the conventional instruction of vocabulary was followed within the classroom environment via providing the learners with example sentences and also vocabulary exercises, and no specific steps were followed for providing the participants with peer or teacher scaffolding via a process approach in the control group. After treatment was over, the three groups were given the vocabulary posttest and the results were used to address the research question.

3. Results
3.1. Reliability of the Instruments
The two main instruments of the study were OPT and vocabulary test. The reliability of these instruments was estimated using Cronbach's Alpha. Table 1 shows the results of Cronbach's Alpha for OPT and vocabulary test.

Table 1. Reliability analysis of OPT and vocabulary test

	Cronbach's Alpha	Minimum	Maximum	Mean	Std. Deviation
OPT	.801	57.00	86.00	73.8000	7.07302
Vocabulary	.821	25.00	42.00	33.8667	5.67957

As seen in Table 1, the instruments have reliability indices over 0.70 which are considered satisfactory (Brown, 2007).

3.2. Normality Test of the Data
To analyze the data, the researchers used Two-way ANOVA. To run the Two-way ANOVA, it was initially needed to make sure that the data sets were normally distributed. Based on the obtained scores from the groups of the

study, 12 sets of data were available. Table 2 shows the results of normality tests on the 12 sets of data.

Table 2. Results of test of normality for the pretests and posttests of the male and female Groups

	Treatment Group	Kolmogorov-Smirnova		
		Statistic	df	Sig.
Vocabulary Pretest	Peer male	.088	16	.200*
	Teacher male	.079	18	.200*
	Control male	.095	12	.200*
	Peer female	.073	24	.200*
	Teacher female	.068	22	.200*
	Control female	.058	28	.200*
Vocabulary Posttest	Peer female	.072	24	.200*
	Teacher female	.065	22	.200*
	Control female	.063	28	.200*
	Peer male	.072	16	.200*
	Teacher male	.069	18	.200*
	Control male	.091	12	.200*

a. Lilliefors Significance Correction

*. This is a lower bound of the true significance.

As indicated in Table 2, all the significant levels related to Kolmogorov-Smirnov test of normality for vocabulary pretest and posttest scores are larger than the critical value of 0.05. Therefore, the data were normally distributed and accordingly, parametric statistics was selected to analyze the data.

3.3. Descriptive Statistics

Table 3 demonstrates the results of descriptive statistics for the peer and teacher scaffolding groups as well as the control group on vocabulary pretest and posttest for the male and female learners.

Table 3. Descriptive statistics for the peer and teacher scaffolding groups and the control group on vocabulary pretest and posttest for the male and female learners

	N	Mean	Std. Deviation	Std. Error
Peer Male Pre	16	78.55	7.32	2.37
Teacher Male Pre	18	75.47	7.54	2.21
Control Male Pre	12	76.42	7.65	1.89
Peer Male Post	16	103.00	8.92	2.23
Teacher Male Post	18	104.50	8.19	1.93
Control Male Post	12	98.6667	9.55	2.75
Peer Female Pre	24	79.55	6.96	1.72
Teacher Female Pre	22	76.63	7.97	2.21
Control Female Pre	28	77.48	6.42	1.44
Peer Female Post	24	105.67	7.53	1.53
Teacher Female Post	22	103.77	7.89	1.68
Control Female Post	28	97.3571	7.14	1.35

3.4. Addressing the Research Question

The answer to the research question was sought through using a Two-way ANOVA. Table 4displays the results of Levene's test of homogeneity of variances as a prerequisite for Two-way ANOVA.

Table 4. Results of Levene's Test of equality of error variances

F	df1	df2	Sig.
.221	5	114	.82

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Gender + Treatment + Gender * Treatment

As seen in Table 4, the significance value is 0.82> 0.05, which exceeds 0.05 alpha value. Hence, the use of Two-way ANOVA is legitimate. Table 5displaysthe results of Two-way ANOVA.

Table 5. Results of Two-way ANOVA

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	713.224a	5	171.35	1.988	.121
Intercept	145431.221	1	1322131.222	3.421E4	.003
Treatment Group	7.814	2	4.545	.545	.228
Gender	693.221	1	701.101	.421	.342
Treatment Group * Gender	47.221	2	18.1221	.278	.021
Error	7314.341	112	57.212		
Total	1417832.000	120			
Corrected Total	7823.225	119			
a. R Squared = .096 (Adjusted R Squared = .066)					

Based on the results of two-way ANOVA, it was found that the main effect of treatment on vocabulary learning was significant (F = 0.27, $p = 0.021 < 0.05$). Based on this result, it can be inferred that both modalities of treatment including peer and teacher technology-enhanced scaffolding through process approach significantly contributed to vocabulary improvement, however; there was no statistically significant difference between the effects of the two treatment modalities on male and female EFL learners' vocabulary learning (F=0.42, p=0.34<0.05).

4. Discussion

The present study set out to explore the sociological effects of peer and teacher scaffolding through process approach in a technology-enhanced environment on the vocabulary learning of young male and female learners. The results of a Two-way ANOVA indicated that both peer and teacher technology-enhanced scaffolding through process approach significantly contributed to vocabulary improvement; however, there was no statistically significant difference between the effects of the two treatment modalities on male and female EFL learners' vocabulary learning.

The results of the present study concerning the effectiveness of both types of scaffolding on vocabulary learning are in line with the previous research

findings confirming the positive role of scaffolding in L2 learning. Similar to the findings of the current study, Ahmadi Safa and Rozati (2016) concluded that scaffolding positively improved EFL learners' listening comprehension. Likewise, the findings of the current study are in congruence with the results of Amiri Samani and Khazayie's (2017) study. Their results indicated that scaffolding contributed to EFL learners' writing development. Moreover, the findings of this study are consistent with those of Khajeh Khosravi's (2017) investigation. Khajeh Khosravi's (2017) results revealed that scaffolding improved Iranian EFL learners' reading comprehension. In a similar vein, the findings of Khodamoradi, Iravani and Jafarigohar's (2013) investigation showed that scaffolding contributed to Iranian EFL learners' language development.

The positive effect of scaffolding in the current study can be justified based on the common core of the peer and teacher scaffolding employed. In fact, both peer and teacher scaffolding share a core component that might account for why both methods have been found to be successful in improving the learners' vocabulary knowledge. Evidently, scaffolding serves as this common core, derived from the Vygotsky's construct of ZPD. Via scaffolding, the distance or gap between learner's current status of ability and potential problem solving ability is shortened providing the learner with more independent problem solving. This procedure can be facilitated more smoothly through the support of a more knowledgeable individual (Zheng, 2016). Such type of support provided by a more knowledgeable individual is known as scaffolding. Consequently, scaffolding is concerned with the intentional intervention of a more knowledgeable individual (e.g., teacher, parents, and peers), who helps the L2 learner to make a smooth transition between the current level of knowledge and target knowledge (Raymond, 2000). As for the impact of technology on learning, some investigations (e.g., Garrett, 2009; O'Dowd, 2007; Warschauer & Meskill, 2000; Wiebe & Kabata, 2010, Toscu, 2013) have studied the effect of technology on the quality of language learning and teaching. The majority of these studies indicate positive outcomes. Similarly, Gasciogne (2006) asserts that the use of multimedia in the educational programs enables the learners to visualize the learning content, making them

more imaginative and creative. Thus, teachers have sought to take the best advantage of new technology to improve language learning (Venezky, 2004). The results of the present study indicated no statistically significant difference between the effects of the two treatment modalities on young male and female EFL learners' vocabulary learning. These findings stand in contrast to previous research findings confirming that gender differences affect language learning. In particular, the results of the present study are inconsistent with the findings of Green and Oxford's (1995) study. Based on Green and Oxford's (1995) findings, female learners are more socially oriented than males. In the present study, it was expected that scaffolding as a mediational and social treatment type would benefit female learners more than male students. Moreover, the findings of the current study are also in contrast with those of Swiatek and Lupkowski-Shoplik (2000) as they concluded that gender differences manifestly impact learners' academic interests, requirements, and success (Swiatek & Lupkowski-Shoplik, 2000).

As the previous research findings have indicated gender has an important role in foreign language learning. However, in the current study it was revealed that gender did not have a significant impact on vocabulary learning in the context of peer/ teacher technology-enhanced scaffolding via process approach. The main reason behind the lack of gender effect could be attributed to the contextual factors present in the context of peer/ teacher technology-enhanced scaffolding via process approach, which have led to the reduction of sociological effects of gender on learning. In other words, the findings of this study can be accounted for by taking account of the role of process approach as well as the application of technology in improving L2 students' learning. The results showed that the impact of peer and teacher scaffolding were the same among the males and females. It was expected that individual differences because of gender would result in differences regarding the impact of peer and teacher scaffolding. One reason for this unexpected result was the strong capacity of scaffolding itself that might have reduced the impact of peer and teacher as well as gender. One more reason would be the intensification of the effect of scaffolding as it was presented through a process approach of vocabulary learning embedded in a technologically enhanced environment.

These might have resulted in the overriding impact of scaffolding, reducing the effect of individual differences such as gender.

5. Conclusion

Based on the findings of the present study, EFL teachers might decide to employ scaffolding in general and teacher and peer scaffolding in particular to improve EFL learners' vocabulary learning. Moreover, the contributions of technology and process approach should be acknowledged more when it comes to vocabulary teaching. The findings of the current study, however, should not be considered conclusive as the participants were selected based on convenience sampling. Accordingly, more replications of the present study are recommended to provide a more comprehensive picture regarding the role of technology-enhanced scaffolding in vocabulary learning. One of the reasons for the lack of a significant difference between male and female learners in vocabulary learning in the current study could be due to the age range of the learners. As the participants of the current study were within the age range of 10 to 12, it can be assumed that at such low age individuals may have not yet reached to a level where gender can be sociologically effective in learning. Thus, similar studies with other age groups are recommended to explore the sociological effects of gender on learning vocabulary further. Moreover, researchers may focus on the effects of other methods of vocabulary teaching such as dynamic assessment within a technology-enhanced learning environment. Also, similar studies need to be done on EFL learners with other levels of language proficiency as the participants of the current study were intermediate level learners. Moreover, studies can be done on the impact of peer and teacher scaffolding on other aspects of EFL learning like grammar, collocations, phrasal verbs and so on.

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