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## The Comparative Effects of Using Synchronous and Asynchronous Social Networks in Teaching Vocabulary on Improving EFL Learners' Reading Comprehension

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**ABSTRACT:** *This study aimed to examine the comparative effects of using synchronous and asynchronous social networks in teaching vocabulary on improving EFL learners' reading comprehension. For the aim of this study, 61 EFL learners were chosen by employing convenience sampling method. The researcher randomly assigned the participants randomly into two groups; the experimental group one (EG1) (n=31) and the experimental group two (EG2) (n=30). The researcher as the teacher explained the procedure of the work to students of both groups. The strategies of teaching vocabulary were the same in both groups. The researcher employed WhatsApp for EG1 and Instagram for EG2. The participants of the EG1 had to be online at a specific time but the students of EG2 had two days to see the posts. After finishing the treatment, the researcher administered a reading test as a posttest. The results of independent samples t-test showed that there is a significant difference in reading comprehension measures for the experimental group one who experienced vocabulary instruction through "WhatsApp" application and the experimental group two who received vocabulary instruction through Instagram. It was shown that students in the asynchronous group had far more advances from the pretest to the posttest in comparison with that of their counterparts in the synchronous group. Through use of synchronous and asynchronous social networks, language learners have this chance to use online instructional materials that increase the rate of their learning.*

**KEYWORDS:** Synchronous social networks, asynchronous social networks, vocabulary, reading comprehension, EFL learners

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### INTRODUCTION

Vocabulary is seen as the knowledge and information about the words and their meaning. Particularly, in foreign language context, vocabulary refers to the number and types of the words that is necessary for reading and writing (Kamil & Hiebert, 2005). The treasure of vocabulary grows over the time. One vocabulary has different dimensions. For example, phonological, semantic and the function of the vocabulary are regarded as the important aspects of it (Nation & Snowling, 2004). Vocabulary knowledge has a significant role in one's performance since it consists of all the words that one should know in his background knowledge for expressing his opinion and communicate effectively and also to understand spoken language. According to Rupley (1998), "vocabulary can be defined as the tape that

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keeps stories, ideas and content together and it makes comprehension in access for children” (p.78). Vocabulary is the body of each language (Davis, 2009). The dominant role of vocabulary is colorful in all language skills. In fact, the level of vocabulary among students has a direct relationship with their successful performance since those students who know enough vocabulary can get the new concepts quickly and better in comparison with those students who know limited vocabularies.

Moreover, in second language studies, the role of vocabulary in different skills has been investigated and one of these areas is reading comprehension that was at the focus of studies for twenty years. The studies showed that there is a positive relationship between the rate of vocabulary that one knows and reading comprehension and this is not a one-directional connection because if one knows enough vocabulary, it helps him to understand and find out written texts better and reading itself can foster the students’ vocabulary (Maher Salah, 2008; Nation, 2001; Stahl, 1990).

Some scholars (e.g., Cooper, 2002; Speece, 2001) stated that the relationship between the rate of the vocabulary and finding out reading comprehension text is obvious. This idea comes from this fact that when a child learns a new word, he uses his metalinguistic awareness abilities. In this respect, metalinguistic awareness is seen as the ability to recognize the structure of language components and coding meaning separately in the mind. Reading comprehension means the ability to find out the information that is stated or implied in the passage and about the meaning of specific words within the context of the passage (Cooper, 2002). Moreover, the results of some studies showed that if students do not know vocabulary adequately, it will have a negative effect on their reading comprehension. This claim was also true in EFL contexts (Chall & Jacobs, 2003).

Some (e.g., Macaro, 2003; Stanovich, 1986) believed that words have the important role in reading comprehension process. When a student start to read a passage, if s/he knows the meaning, s/he will get the meaning easily. But if the students don’t know many words, they will find the text boring and try to escape from it (Biemiller, 2005). Moreover, some scholars (e.g., Chall & Jacobs, 2003; Macaro, 2003) believed that there is a direct relationship between vocabulary instruction and reading comprehension. If they students don’t know the meaning of the words, they may have bad feeling toward reading comprehension.

In addition, by looking at the growing importance in reading comprehension, it is worthwhile to regard the types of vocabulary instruction that has been found to improve it. Vocabulary learning strategies (VLS) has become a popular research topic among researchers in the last two decades. Research on vocabulary instruction found that there are a few effective methods for vocabulary instruction (Sedita, 2005). One way of teaching vocabulary can be happened by employing technology.

These days the world has become a village because of technology. The needs for learning a foreign language especially an international language like English is more than before. As a result, we face many problems and challenges in educational systems. It suggests chances for

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educational systems as well as learning and teaching (Battro & Fischer, 2012). With the expansion of technology and internet, the need to learn a foreign or second language becomes colorful. Learning and teaching foreign/second language recently received more attention than before (Schmitt, 2002). One way of employing technology in foreign language teaching is to employ synchronous and asynchronous social networks.

Traditional methods or techniques of teaching vocabulary which are employed in many educational settings especially in developing countries, it forces students to memorize the meaning of the words by their mother tongue. Teachers come to class and write some words on the boards with their equivalence and students should memorize those words and they should be ready for next session (Krashen, 1982). Therefore, the sheer memorization of the paired translation of the target words, which is widely applied at school and universities, is not regarded an effective method (Tabatabaei, 2012). These ineffective methods eventually led to unsuccessful learning.

Various studies (e.g., Chall & Jacobs, 2003; Sedita, 2005) have shown that EFL students demonstrate poor comprehension and that good performance in reading comprehension is highly dependent on learners' view toward comprehending which engenders rich vocabulary acquisition needed for performance in reading (as cited in Moradian, 2015). Thus, it is believed that vocabulary has a positive role on comprehending written texts and reading comprehension.

The objective of this study is to examine the comparative effect of synchronous and asynchronous social networks in teaching vocabulary on improving EFL learners' reading comprehension. Given the purpose of this study, the following research questions are addressed:

- (1) Does the use of synchronous social networks in teaching vocabulary have any significant effect on intermediate EFL learners' reading comprehension?
- (2) Does the use of asynchronous social networks have any significant effect on intermediate EFL learners' reading comprehension?
- (3) Is there any significant difference between the effect of employing synchronous and asynchronous social networks in teaching vocabulary on improving EFL learners' reading comprehension?

## **REVIEW OF THE RELATED LITERATURE**

In their study, Lotfi and Hosseini Pozveh (2019) investigated which approach to vocabulary learning, would facilitate vocabulary learning more for Iranian EFL learners. From among the targeted population of 82 intermediate students of an English institute in Isfahan, Iran, students between the ages of 12 to 18, a sample of 60 students were chosen based on their score on a quick placement test (QPT). Both synchronous and asynchronous groups were taught "Advanced Vocabulary and Idiom", by the same teacher at one particular institute. In

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the period of 10 sessions of a semester, the synchronous groups were taught the vocabulary items in class synchronously and the asynchronous group was taught via email. After the posttest, the results with the t-test observed, indicated a significance difference between synchronous and asynchronous groups, p-value of .003, gender with the p-value of 0.027 and pre-test and post-test with the p-value of 0.047, but no significance was observed for age with the p-value of 0.127. The post-test results indicated that the synchronous group considerably outperformed the asynchronous group in the vocabulary knowledge they attained.

In other study, Alibakhshi and Mohammadi (2018) investigated whether synchronous and asynchronous multimedia components: text and text with added graphics had any effects on EFL learners' learning of collocations. In doing so, 150 male EFL learners at pre-intermediate proficiency level were selected through convenience sampling. They were divided into six groups. The results of the study showed that computerized mediated instruction was more effective than non-computerized instruction. Also, synchronous computerized instruction was more effective than asynchronous computerized instruction. The results also showed that presentation through text with added graphics was more effective than presentation through simple text. The results are discussed and some pedagogical implications are presented.

In the same vein, Sadeghi and Ahmadi (2018) investigated the impacts of three kinds of gloss conditions: computer-based audio gloss, traditional non-CALL marginal gloss, and computer-based extended audio gloss on the reading comprehension of Iranian EFL learners. They found that extended audio gloss group comprehended online computerized L2 texts better than other groups. Moreover, all experimental groups performed better than the control group in comprehending the text. Their study offers clear evidence that utilizing computers and multimedia glosses can be influential in teaching language in general and online computerized second language text comprehension in particular.

In his study, Al-Seghayer (2013) examined the comparative effect of dynamic picture and constant picture on EFL learners' vocabulary learning. The researcher employed three conditions. Printed text definition alone, printed text definition plus pictures, and printed text definition plus with video clips was employed in this study. The results indicated that the mixture of the video and text was more useful than using picture alone.

In his study, Al-Masri (2012) investigated the effect of web-based curricula on Jordanian students' English language achievement. The results of his study showed the using web-based curricula were very effective in students' English achievement and their motivation.

In addition, Mehrpour et al, (2011) investigated the possible relationship between the knowledge of vocabulary and reading comprehension ability of EFL learners. The results gained from the analysis of the data showed that vocabulary knowledge are positively correlated with reading comprehension of the learners.

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In sum, it can be concluded that although many studies have been conducted in respect to the role of the vocabulary on reading comprehension ability of the learners and some of them integrated technology in their method, but according to the best knowledge of the researcher, no empirical study was performed to compare the effect of teaching vocabulary through synchronous and asynchronous social networks on improving EFL learners' reading comprehension. The aim of this study is to fill this gap in the literature.

## **METHOD**

A quasi-experimental design was employed in this study since there is no true randomization; that is convenience sampling was used. Genders of the participants was not taken into consideration as the moderate variable, the intermediate level of the students was the control variable.

### **Participants**

For the purpose of this study, the researcher considered intermediate EFL learners of "Sadaf" institute as the population of the study. In fact, convenience sampling design was employed in this part. Convenience sampling is a non-probability sampling technique where the participants are chosen because they are easily in access of the teacher. For homogenizing the participants, the researcher conducted Preliminary English Test (PET) (2014). The participants who scored between one standard deviation below and one standard deviation above the mean were accepted as the research sample. Consequently, 61 students were accepted as the research sample and they were assigned into two experimental groups; the first experimental group (EG1) (n=31) and the second experimental group (EG2). In fact, they were in seven intact classes. All of the participants of this study were female and they were at the ages of 14 to 17. The course book of the students in the institute was *Passages 1*. This book is considered to be suitable for intermediate students.

### **Instruments**

For getting the proper results, two instruments were employed for gathering data: (a) Preliminary English Test (PET), and (b) a researcher-made reading comprehension test as pre/posttest. Moreover, 60 words were selected from the reading comprehension texts as the teaching material, as well as the applications of WhatsApp and Instagram that were employed in the experimental groups.

#### *PET*

For homogenizing the participants of the current investigation and to minimize the individual differences among the participants, PET (Preliminary English Test) was employed, which is published by Cambridge English for Speakers of Other Languages (ESOL, 2014). The PET consists of four sections. The first section is devoted to reading comprehension section that it consists of 35 items, the second section is devoted to writing task that usually eight items were given to students and they have write carefully, the third section of PET is listening part that

it includes 25 multiple choices items and the last section of this test is speaking section that two raters should record the candidates' voice and scored it based on the Rubric of the PET.

It should be noted here that for the sake of facilitating the administration and scoring procedure and with respect to the time limitation the researcher had for administering the test, its speaking and writing sections were not executed. Therefore, the PET for the study purpose included only reading and listening papers. The test was used for homogenizing the participants of this study. The reliability of this test was calculated and it reached to .91.

#### *The researcher-made reading comprehension test as pretest and posttest*

The researcher designed two homogenous multiple-choice reading comprehension tests based on PET different published versions from 2014 to 2016. The researcher used different versions of the PET in order to cover all issues that were taught in the both groups. The first draft of teacher-made reading comprehension test as the pretest contained 35 items, and after evaluating its content validity by two experienced EFL teachers, 5 items were removed. This test was used to evaluate the participants' possible tacit knowledge of reading comprehension. The reliability of this test was calculated and it reached to .79.

Then, after performing the treatment, the teacher-made reading comprehension test as the posttest was administered. This test like the pretest was designed based on PET different published versions from 2014 to 2016. It consisted of 33 items, and after evaluating its content validity by two experienced EFL teachers, 3 items were removed. The reliability of this test was calculated and it reached to .81.

#### **Data Collection Procedure**

Given the objective of this investigation, 85 intermediate EFL learners were chosen as the target population from Sadaf English Institute which is located in Tehran, Iran. The Preliminary English Test (PET) (2014) was conducted for homogenizing the participants. Given the results of this test, those students whose scores fell between one standard deviation below and above the mean were considered as the research sample of this study and they were considered more or less homogenize sample. The participants of this study were in seven intact classes. The researcher divided the participants randomly into two groups: the experimental group one (EG1) (n=31) and the experimental group two (EG2) (n=30). Before, starting the treatment, researcher-made reading comprehension test as the pretest was administered to evaluate the participants' possible tacit knowledge of reading comprehension. At the time of performing this study, the participants had to study unit 1 and 2 of the *Passages I* which was the course book of students in the institute.

As it was mentioned before, the researcher designed two homogenous multiple-choice reading comprehension tests based on PET different published versions from 2014 to 2016. The researcher used different versions of the PET in order to cover all issues that were taught in the both groups. The pretest was conducted to assess the participants' level of reading comprehension. The researcher as the teacher explained to students EG1 about the procedure of working in each session and about the WhatsApp application. The researcher employed

this application as the synchronous social network. Many of the students were familiar to it. The teacher explained about it to those who were not familiar with it. She made a group in this application and she said that these activities have score in order to make motivation among students. Then, she said, “all of you should be online at 7 P.M to 8 P.M”. The teacher sent posts at this time and students had to be online to see the items. Each student had to make sentences with new words provided by teacher in group. Each session, the teacher posted 5 new words. The strategies of teaching these words were definition and matching and related picture. Then, in each session, the matching exercises were provided and students had to answer and share their answer in the group. The same words were taught in the second experimental group. The strategies of teaching vocabulary were the same. In this group, the teacher used Instagram and all of the students had it on their phone. In each session, she posted 5 new words on Instagram. Students of this group had two days to see the posts make sentences and do the matching exercises. It is worthy here to mention that these words were selected mainly from the reading text of posttest. The difficult words of each text were chosen as the teaching material.

The students of both groups participated in 12 sessions of 90 minutes, three sessions of a week in conventional classes. Further teaching vocabulary through synchronous social network in EG1 and asynchronous social network in EG2 was performed additionally. It is worth mentioning that one session was devoted the pretest and one session to the posttest. In each session, five words were taught. These words were mainly selected from the text or reading passages of posttest. The words and the texts were the same in both groups.

## RESULTS

In order to select homogeneous participants, the researcher gave PET to 85 EFL learners. The results gained on PET are set forth in Table 4.1. According to Table 4.1, the ratios of skewness and kurtosis over their respective standard errors are not beyond the ranges of +/- 1.96 showing that the PET scores are normally distributed. According to Table 4.1, the mean, median and mode of the PET scores are 56.51, 57.50, and 60 respectively.

Table 4.1

### *Descriptive Statistics for PET*

N	mean	median	mode	SD	Skewness Ratio	Kurtosis Ratio
85	56.51	57.50	60	14.84	-.417	-1.129

Based on the results of PET (Table 4.1), 61 learners whose scores were between one standard deviation plus and minus the mean (56.51) were chosen as the participants for the main study. Figure 4.1 below is a histogram that demonstrates the normal distributions of the PET scores.

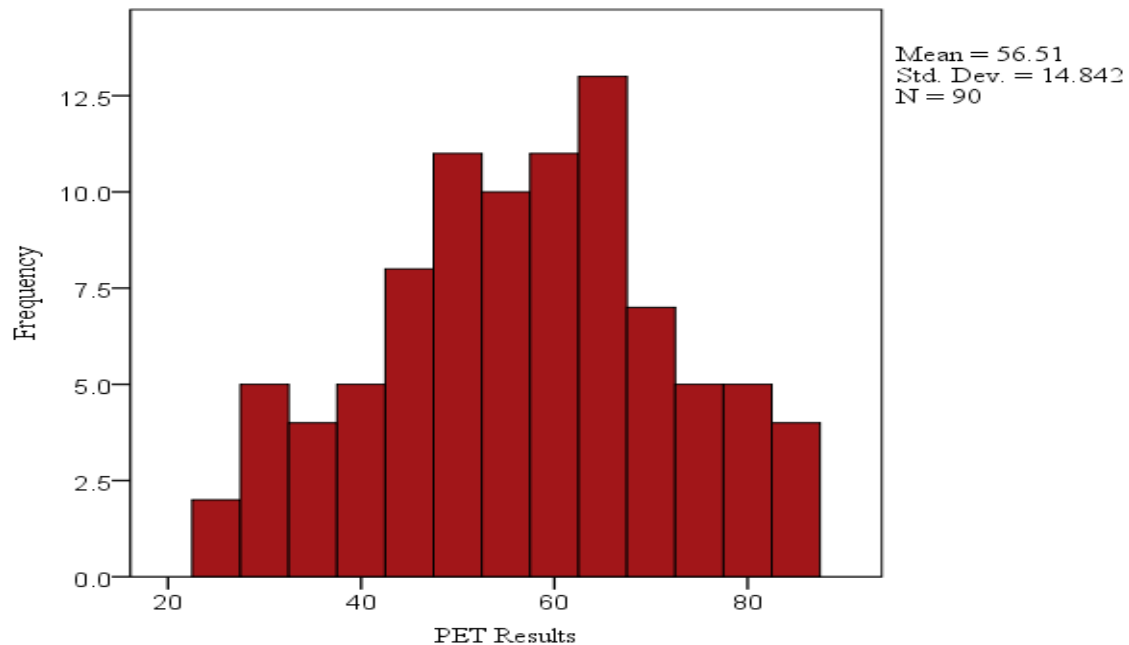


Figure 4.1 Histogram of normal distribution of PET scores

### Results of Research Question One

The paired-samples *t*-test was conducted to examine the potential effects of teaching vocabulary in *synchronous* social networks on intermediate EFL learners reading comprehension. The skewness and kurtosis measures of pretest and posttest data were checked, with both being between an agreed-upon range of +1.96 and -1.96.

The paired-samples *t*-test indicated that there was a significant difference between pretest and posttest of synchronous social networks group,  $t(30) = -18.88, p = .00$ , with the Cohen's effect size value being 1.69, which can be considered as a very large effect size. As can be seen in Table 4.2 and Table 4.3, the students in the posttest ( $M = 19.70, SD = 3.46$ ) had a better performance, as against theirs in the pretest ( $M = 16.74, SD = .2.78$ ). To conclude, it can be said that teaching vocabulary in synchronous social networks did have a statistically significant effect on intermediate EFL learners reading comprehension and our first null hypothesis was rejected.



Table 4.2

*Descriptive Statistics of Two Testing Times of Synchronous Social Networks Group( N= 31 )*

		Mean	Std. Deviation	Std. Error Mean
Synchronous	Pretest	16.74	2.78	0.49
Social Networks	Posttest	19.70	3.46	0.62

Table 4.3

*Paired-Samples t-test of Synchronous Social Networks Group*

	Paired Differences				t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Interval of the Difference				
			Lower	upper			
Pretest/ Posttest	-2.96	.87	-3.28	-2.64	-18.88	30	.00

## Results of Research Question Two

Another paired-samples *t*-test was implemented to investigate the potential effects of teaching vocabulary in *asynchronous* social networks on intermediate EFL learners reading comprehension. The skewness and kurtosis measures of pretest and posttest data in this group also were checked, with both being between an agreed-upon range of +1.96 and -1.96.

The paired-samples *t*-test indicated that there was a significant difference between pretest and posttest of asynchronous social networks group,  $t(29) = -23.28$ ,  $p = .00$ , with the Cohen's effect size value being 3.76, which can be considered as a huge effect size. As can be seen in Table 3 and Table 4, the students of this group in the posttest ( $M = 22.26$ ,  $SD = 3.78$ ) had a better performance, in comparison with theirs in the pretest ( $M = 16.50$ ,  $SD = .273$ ). To conclude, it can be said that teaching vocabulary in asynchronous social networks also did have a statistically significant effect on intermediate EFL learners reading comprehension and our second null hypothesis was rejected as well.

Table 4.4

*Descriptive Statistics of Two Testing Times of Asynchronous Social Networks Group (N= 30 )*

		Mean	Std. Deviation	Std. Error Mean
Asynchronous	Pretest	16.50	2.73	0.50
Social Networks	Posttest	22.26	3.78	0.69

Table 4.5

*Paired-Samples t-test of Asynchronous Social Networks Group*

	Paired Differences				t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Interval of the Difference				
			Lower	upper			
Pretest/ Posttest	-5.76	1.35	-6.27	-5.26	-23.28	29	.00

### Results of Research Question Three

To answer the third research question, that is, to investigate the difference between the effects of employing synchronous and asynchronous social networks with respect to teaching vocabulary on improving EFL learners' reading comprehension, one independent-samples *t*-test was conducted on the gain scores (the deviation score), the difference between the pretest and the posttest of students in both synchronous and asynchronous groups.

Table 4.6

*The Descriptive Statistics of Reading Comprehension Gain Scores of Different Groups from Pretest to Posttest*

Group	N	Mean	Std.D	Std. Error Mean
Gain Score Synchronous	31	2.69	0.87	0.15
Asynchronous	30	5.76	1.35	0.24

Table 4.7

*Independent Samples t-test of Gain Scores from Pretest to Posttest*

		Levene's Test		t-test					
		F	Sig.	t	df	Sig	95% CI		
							Lower	Upper	
Gain Score	Equal variances assumed	13.94	0.00	-9.60	59	0.00	3.38	2.27	
	<b>Equal variances not assumed</b>			<b>-9.54</b>	<b>49.32</b>	<b>0.00</b>	<b>3.38</b>	<b>2.21</b>	

The results of the independent-samples *t*-test on gain scores of reading comprehension from the pretest to the posttest indicated that there was a significant difference between the mean of gain of synchronous group ( $M = 2.69$ ,  $SD = .87$ ) and that of asynchronous one ( $M = 5.76$ ,  $SD = 1.35$ ),  $t(49.32) = -9.54$ ,  $p = .00$ , equal variance not assumed (See Tables 4.6 and 4.7), with Cohen's *d* effect size of 2.69 which was considered a huge effect size (Sawilowsky, 2009). It can be said that students in the asynchronous group had far more advances from the pretest to the posttest (an average of 5.76 points increase) in comparison with that of their counterparts in synchronous group (an average of 2.69 point increase). Consequently, it can

be concluded that there was a statistically significant difference between the effects of employing synchronous and asynchronous social networks in teaching vocabulary on improving EFL learners' reading comprehension and our third null hypothesis was rejected.

## **DISCUSSION**

The results of this study were similar to the results of Al-Seghayer (2013) who investigated the comparative effect of dynamic picture and constant picture on EFL learners' vocabulary learning. The researcher employed three conditions. Printed text definition alone, printed text definition plus pictures, and printed text definition plus with video clips was employed in this study. The results indicated that the mixture of the video and text was more useful than using picture alone.

Moreover, the results of the current investigation were similar to the results of the Al-Masri (2012). He examined the effect of web-based curricula on Jordanian students' English language achievement. The results of his study showed the using web-based curricula were very effective in students' English achievement and their motivation.

## **CONCLUSION AND IMPLICATION**

In order to investigate the comparative effects of the teaching vocabulary through synchronous and asynchronous social networks on EFL learners' reading comprehension, the first experimental group was trained by the use of WhatsApp as synchronous social network while the experimental group two used Instagram. The scores of the students of the both groups were recorded before and after the treatment. For comparing the results of the scores of these two groups, the researcher employed an independent samples t-test. The analyzing of the results showed that although both groups got better scores in the posttest, but the second experimental group that used Instagram as an asynchronous social network performed significantly better the first experimental group who used synchronous social network.

Generally, it can be said that using online platform for teaching can make a suitable atmosphere for learning. Using asynchronous social network gives the learners the chance to see the content whenever she feels she is ready. It can be seen as an interesting platform for teaching and learning different components and skills of the language. Employing these networks can make the environment more fun for the learners. In fact, the teachers can provide the meaningful instruction with integration real world with virtual world and through online session.

In sum, it can be said that in this study employing both type of the social networks was effective on reading comprehension performance. Thus, the null hypotheses of this study were rejected here. The comparison between the scores of the first and second experimental group showed that the participants of the second experimental group who received the instruction through Instagram as an asynchronous social network performed significantly better in comparison to first experimental group.

The results of the current study present some theoretical and empirical supports for teachers in order to employ the social networks in their own work. They can use the flexible environment in order to enhance learning among their students. By using virtual environment, not only teachers can save their time but also they can enhance their students' motivation.

By employing asynchronous social network, the students can see the posts whenever they have free time. Thus, it may have positive effect on their self-autonomy and independency. Moreover, using Instagram for teaching is very attractive for students and they can get rid of boring atmosphere of the class. Seeing the post and writing comments are also very interesting for learners.

Generally, employing online instruction is regarded as the effective way for enhancing learners' motivation and the quality of their learning. It is regarded as the useful tool for enhancing different language skills and components of the learners. Thus, teachers and syllabus designers can employ these online tools in their course of teaching.

Teachers can employ social networks as a good platform for teaching different content since such environment is so funny for learners and it enhances their motivation toward learning. It also creates another experience of the learning that makes the learning enjoyable for the learners. Employing Instagram as one of the popular applications enhances the quality of the learning among students. For example, when the teacher teaches the words through this application, the students will learn the content very fast and they are able to recognize the words that they have learnt through Instagram more easily in different contexts.

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