

Effects of Using Telegram on Iranian Undergraduate Law Students' Vocabulary Learning: Gender in Focus

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Abstract

This study generally aims to examine the effectiveness of Telegram mobile application on vocabulary learning among Iranian law students. The study also specifically aims to explore the moderating effect of gender on vocabulary learning and to investigate the participants' attitudes towards using Telegram for vocabulary learning. To achieve these aims, from among 100 law students in Islamic Azad University of Meymeh, Isfahan, Iran, 60 homogeneous students were selected based on their scores on Oxford Placement Test (OPT). A vocabulary pretest was administered to examine their level of vocabulary knowledge prior to the treatment. Then, 400 law specific words were taught to the participants within 10 weeks, two sessions of 60 minutes per week via Telegram. After the treatment, a vocabulary posttest was conducted. The findings showed that the students' vocabulary knowledge improved and they had positive attitudes toward using Telegram mobile application based on the responses given to the questionnaire. Other findings suggest that female participants outperformed their male ones. Findings have implications for language learners and teachers as well as materials developers.

Keywords: Telegram, Vocabulary Learning, Gender, Law Student, Mobile Applications

1. Introduction

In recent decades, the connections among nations have been considerably increased. Therefore, a large body of international legal activities is run in English, and numerous legal documents are drafted in the English language as well as other languages (Breeze, 2015). Therefore, students of law need to become more competent in English and improve their vocabulary knowledge. Furthermore, they particularly need to learn to deal with the complicated language of legal documents, which is unclear even to the majority of native speakers due to the complex syntax, specialized vocabulary, and use of old-fashioned conventional expressions (Cohen, 2008).

Teaching legal English vocabularies has often been the center of attention, and the didactic materials are designed to teach L2 students in this demanding field (Ingels, 2006; Reinhart, 2007). In the age of globalization, the applications of mobile technologies has changed the teaching-learning process in the numerous educational levels to make the education natural, vibrant and collaborative (Huang & Sun, 2010). Mobile technology offers great potential for university students' language learning. Numerous studies have been conducted on utilizing mobile technology in language learning classroom (Lai & Admiraal, 2022).

Applying global technologies in the educational contexts not only encourages the level of teaching but also inspires the learners in getting information by means of inventive and attractive tasks. The proper use of mobile-related technologies in and outside the classroom accelerates the teaching-learning process and helps the students learn the language better and gain information in depth. Language instructors can create the suitable environment for teaching by using technology (Moghaddas, 2016). Undeniably and unquestionably, social networking has been proven to be a global phenomenon that has caused a vast paradigm shift in the world of Learning and education especially learning English language (Muftah, 2022)

The entrance of information and communication technology which allows for easy access to information in an appropriate form, social media and social network services such as Facebook, Twitter, WhatsApp, and Telegram enable easier convenience and restoration of information from anywhere and at any time. Through these applications, information is becoming mingled with our daily lives and could either improve productivity, efficiency, and brainpower or make users susceptible to its side effects (Williams, 2014). Following this declaration, Ellison (2007) renowned that the rise of social media sites as another platform on the internet has obtained approval over the last decade. The sites have attracted millions of users universally. Due to this fact, Pempek, Yermolayeva, and Calvert (2009) declared that many people are changing the outlets where they search for news, information, business and entertainment.

The social media innately have the abilities of educating, informing, entertaining and inflaming the audience, of which are also the fundamental function of the mass media (Ellison, 2007). Principally, they own a transmissible and outreaching effect which the usual media lack. This potential is most likely what Buhari, Ahmad, and Hadi Ashara (2014) referred to as 'unstoppable power of the social media'. The social media and social network tools particularly WhatsApp Messenger, Facebook, Viber, and Telegram have become leading factors in today's digital world and are influencing how users communicate and businesses operate (Tawiah, Nondzor, & Alhaji, 2014).

Based on Chen and Chung (2008), vocabulary learning is a basic issue for English learning because vocabulary encompasses the basic building blocks of English sentences. Consequently, many studies have tried to improve the efficiency and performance when learning English vocabulary. Effective language skills and subskills are very important. Huckin, Haynes, and Coady (1993) stated that vocabulary knowledge is one of the most important components of performance in a second language especially in academic settings. Wilkins (1972) argued that "without grammar very little can be conveyed, without vocabulary nothing can be conveyed" (pp. 111-112). Oxford (1990) revealed that language learners naturally have difficulty memorizing large vocabularies. The English vocabulary has an extremely important role in English learning. Recently, several studies have examined English learning, and most of them highlighted the importance of vocabulary learning to English learning (DeCarrico, 2001). An excellent range of vocabulary is useful for inferring meaning from English sentences (Rupley, Logan, & Nichols, 1998).

Moreover, learners can learn English vocabulary in their leisure time at any location that has a wireless network, as the proposed personalized mobile English vocabulary learning system has been applied on handheld mobile gadgets. Compared with the communicative approach chiefly concentrated on real-life language communication, the proposed English vocabulary learning strategy instantaneously considers embracing the personalized vocabulary learning based on individual vocabulary ability and spreading individual memory cycles of various vocabularies to foster the effect of English vocabulary learning. Experimental results show that using spare time to memorize English vocabulary via mobile devices is a practicable way of improving English vocabulary ability because mobile learning facilitates learning activities at anyplace and anytime. With the fast growth in wireless and mobile technologies, mobile learning using mobile devices such as PDAs, tablet PCs, and cell phones has gradually become considered effective because it receives all the advantages of e-learning and overcomes limitations of learning time and space that limit web-based learning systems (Chen & Chung, 2008).

Teachers protest about their students' usage of mobiles in classrooms and say that the students use their mobile phones for chatting and playing games that interrupts the teaching-learning environment. Many teachers sense that mobile phones are of great disturbance to their teaching process so they strongly oppose the use of them in the classrooms. In contrast, many students and teachers find that they can produce great learning results when they are used for academic purposes (Habbash, 2015). Accordingly, Boyle (2013) stated that since students use mobile phones broadly for playing games and chatting with friends, the researchers feel that it would be ideal to draw their attention toward using these devices for educational goals, too. They can achieve learning autonomy by using relevant mobile applications for their classroom activities.

One of the most appropriate contexts where mobile phones can be well utilized is in English as a second language (ESL) classrooms including English for specific purposes (ESP) courses. ESP instructors must recycle both learning materials and experiences to engage learners increasingly to learn effectively. In doing so, the process of teaching and learning ESP activates knowledge of the learners and their use of language skills (IACOB, 2022). In Iran, ESP students are very busy with their content course books thus they have less tendency to spend their time learning a foreign language. Besides, the traditional ways of teaching ESP vocabulary have not inspired them to learn the foreign language and its components very well. Considering the students' excessive interest and immense access to mobile phones everywhere and every time, the concern is to tailor the use of mobile applications, namely Telegram, in vocabulary teaching.

Making a relevant statement about the significance of vocabulary, Krashen (1989) pointed out that second language (L2) learners understand the significance of vocabulary for learning an L2 as they carry dictionaries with them rather than grammar references. Those L2 learners who profit from an abundant knowledge of vocabulary do better and are more successful, both in receptive and productive skills, than those whose range of vocabulary is smaller. It is discussed that English foreign language

(EFL) learners need to attain a threshold level of L2 vocabulary to be capable to communicate fluently in L2 and understand an authentic text (Laufer & Ravenhorst-Kalovski, 2010).

Vocabulary teaching is at the heart of emerging proficiency and attaining competence in the target language. There has been an endless struggle in search of the best method to teach vocabulary. In ESP context, good command of vocabulary is generally considered as becoming closer to a proficient ESP reader or writer. Therefore, teaching vocabulary should be an integral part of ESP language teaching programs from the beginning levels (Mefolere, 2016).

Mobile-assisted language learning (MALL) applications like Telegram allow the learners to use the least time to achieve the most efficient vocabulary learning. This paper examined whether using Telegram had any significant effects on enhancing Iranian law students' vocabulary learning and if there was a significant difference in applying Telegram for male and female students. The answers to the following research equations were pursued in this study:

1. Does using Telegram significantly affect Iranian law students' vocabulary learning?
2. Does gender significantly affect the range of vocabulary learning via Telegram?
3. What are the Iranian law students' attitudes towards vocabulary learning via Telegram?

2. Review of Literature

Technology has brought a revolution in the field of education. Rapid development of using mobile phones in vocabulary teaching and learning has been seen in the literature in recent years. More elaborations are provided in the following sections.

2.1. Review of the Theoretical Studies

2.1.1. Technology

Throughout the preceding centuries, education has been under regular changes and development from being entirely a schema at the hands of scholars to a widespread concept at the service of the public. Classroom education has been substituted by the cybernetic environments in the learning method through technologies (Moghaddas, 2016). According to Habbash (2015), sharing information via social-networking sites like Facebook, Google+, Twitter, LinkedIn, Telegram, etc. has become a part of daily lives of people. McCarten (2007) has reported that students now have access to the wealth of information and the language tools like the online dictionaries, and the only requirement for tapping this wealth of information and the online sources is to prepare the proper ways to help the students and teachers use them. As it was already mentioned, teaching vocabulary becomes easier and provides the students a way for their learning autonomy. It is now a necessity for teachers to find different ways to use the technological devices for educational purposes instead of trying to prevent the students from using them in the classrooms. Castell (2004, as cited in Mefolere, 2016) argued that it is not purely the technology that defines modern societies but also cultural upbringing, economic, political organization, religion and social status all shape the network society. Society shapes technology according to the needs, values, and interests of people who use it. The application of technology in language learning has transited from desktop to palmtop devices such as mobiles and tablets, and thereby the concept of MALL has come into existence (Moghaddas, 2016).

2.1.2. MALL

MALL is a subcategory of both mobile learning (M-Learning) and computer-assisted language learning (CALL). It is a two-way process which comprises the aid of handheld technology and any other similar portable devices to reduce inadequacy of learning location with the mobility of general portable devices. It also includes the use of mobile technologies such as cell phones, MP3 and MP4 players, notebooks, hand-held mini computers, cameras, data storage devices, PDAs and devices such as the iPhone or iPad.

Ally (2009) enumerates M-Learning as the delivery of learning content to mobile devices (Hwang & Tsai, 2011). Hence, it is generally getting hold of any knowledge and skill by using mobile technology everywhere at any time to provide the different learning materials on hand. In fact, M-Learning not only brings strong portability by substituting books and notes with a mobile RAM packed with small-modified attractive learning materials but also merges vivid games for a more appropriate and entertaining knowledge getting (Moghaddas, 2016).

A quotable, challenging statement indicating the necessity of integrating M-Learning with pedagogical attempts would be that of Akenaga (2005), who remarks that "today's students are more technology savvy than the university staff and officials, and they expect their needs to be met anywhere, anytime and with any device" (p. 12). Therefore, researchers strive to look into the effectiveness of one of the uses of mobile phones as educational tools to be utilized (Alavinia & Qoitassi, 2013).

Technology is all-pervading, affecting almost every aspect of our daily life. Compared with desktop and laptop computers, the access to mobile networks is of low cost and economically advantageous. M-Learning is convenient from anywhere, provides access to the classroom activity contents, helps learners communicate with their teachers, and peers at any time. As Sharples, Taylor, and Vavoula (2005) stated: "[it] is the learner that is mobile, rather than the technology" (p. 3).

2.1.3. Telegram

Telegram was started in 2013 by the brothers Nikolai and Pavel Durov, the creators of VK, the largest social network of Russia. According to Telegram announcement, they had 100 million monthly active users in February 2016. Applications like WhatsApp and Telegram use the internet to send images, video and audio media messages. Such applications are available on the new generation smartphones like iPhone, Android, Blackberry, Samsung, Sony that allow users to send text messages to each other for free. Users are not charged for a text sent through them. This is because they send messages through an internet

data connection. They support many different message types, from simple text to pictures to audio files and videos (Bouhnik & Deshen, 2014; Tawiah et al., 2014).

2.1.4. Vocabulary

Fiorito (2005) and Liuolienė and Meliūnienė (2012) stated that vocabulary is the essential instrument for interaction and knowledge. It allows us to direct information to others, to deduce facts, beliefs and views, and to put ourselves across. Various aspects of life and professional activities need specific vocabulary which may not be easy for everyone to pick up even in one's mother tongue, not to mention a foreign language. Because of the occurrence of the English language in international relations, non-native English speaking students and professionals are greatly in search of expert training in English for specific purposes (ESP), and such training is now provided by universities and colleges which concentrate fully on ESP.

Besides, particular courses are presented to those fascinated in learning or enhancing ESP which is necessary for professional development. Indeed, specialized vocabulary in teaching ESP is an initial goal and a central and important component in the course of learning (Liuolienė & Metiūnienė, 2012). Usually ESP learners are highly-motivated adults with knowledge and experience in their special fields or students being trained for a future job having interests in their careers. Their desires and methods of teaching might be very different from the requirements of average learners of English as a second language. ESP stresses more on vocabulary in context than on teaching grammar and language structures as the students are learning the language combined into a subject matter area chief to them in order to communicate a set of professional skills and to perform particular job-related functions (Fiorito, 2005, cited in Liuolienė & Metiūnienė, 2012).

2.2. Review of the Practical Studies

Mobile devices have opened new doors with their exceptional potentials such as "accessibility, personalizability, and portability" (Saran & Seferoglu, 2010, p. 253), and "the physical characteristics (e.g., size and weight), input capabilities (e.g., keypad or touchpad), output capabilities (e.g., screen size and audio functions), file storage and retrieval, processor speed, and the "low+ error rates" (Alzu'bi & Sabha, 2013, p. 179) in the teaching and learning procedures. The previous era has seen the fast expansion in using mobile phones in vocabulary teaching and the emphasis has been on the function of these devices in teaching vocabulary to L2 learners.

An aspect of mobile phones that was originally widely used in the studies was the SMS (Short Message Service). Numerous experimental findings compared SMS-based vocabulary instruction to various types of more traditional instruction. For instance, Looi et al. (2011) compared the effect of SMS with printed materials. The obtained results revealed that SMS groups outperformed the control groups who were given printed materials in the posttest; on the other hand, there was no significant difference in the delayed posttests. Likewise, Suwantarathip and Orariwatnakul (2015) conducted an empirical study to compare the effect of in-class paper-based vocabulary exercises with short messages sent to learners outside the classroom with the aim of teaching and practicing new words. This study was conducted over the course of 6 weeks. They maintained that the participants in the experimental group acquired better scores than the participants in the control group.

Along with the text messaging capabilities of SMS, Saran and Seferoglu (2010 as cited in Basal, Yilmaz, Tanriverdi, & Sari, 2016) investigated the use of MMS (Multimedia Messaging Service) for teaching English vocabulary. SMS and MMS messages that incorporated multimedia such as images and sounds were used for teaching vocabulary to the experimental group. On the other hand, the same vocabulary items were taught to the control group by traditional methods in the classroom. On the posttest, the participants in the experimental group acquired significantly higher scores than the participants in the control group.

In another study, to compare the influence of SMS contrasted with paperback dictionaries in academic vocabulary learning, Alemi, Sarab, and Lari (2012) stated that although the SMS group was more successful on the delayed posttest, there was no considerable difference between vocabulary knowledge of two groups in the posttests. In addition, all these studies showed the positive attitudes of students towards the use of SMS for vocabulary learning.

Basoglu and Akdemir (2010) compared the effects of using two different instruments of mobile phones and flashcards for teaching vocabulary to EFL learners. Mobile applications were used for the experimental group to teach the words during six weeks while the same words were taught to the control group via flashcards. The results indicated that there was a significant difference between two groups since the experimental group achieved significantly better scores on the posttest.

Stockwell (2010) performed a study to compare vocabulary learning on mobile phones and computers dealing with student attainment, task completion speed, and time during three years between 2007 and 2009. A Moodle-based system called *VocabTutor* was designed to run on both computers and mobile devices. The obtained results of the study revealed that the differences between the students' scores were not significant. Nevertheless, most students preferred using the system on computers even though mobile phone use had become widespread in 2009.

Alavinia and Qoitassi (2013) investigated the viable effect of using MALL-operated vocabulary instruction technique on the process of vocabulary acquisition. To this end, forty female elementary learners studying at Iran Language Institute took part in the study. The findings of the study revealed that treatment using the mobile application supported vocabulary learning had been very effective in enhancing learners' vocabulary acquisition. The results also showed that the use of this technique had been effective in changing the learners' attitudes towards the suitable use of mobile phones for educational goals.

Azar and Nasiri (2014) investigated the effectiveness of using mobile phones for teaching English vocabulary to Iranian EFL learners and their attitudes towards this issue. To achieve these aims the participants were divided into the control and the experimental groups. Vocabulary items were taught to the experimental by means of mobile applications while the same items were taught to the control group via regular methods. A questionnaire was also administered to the experimental group to detect

their attitudes towards the use of mobile application for teaching English words. The results indicated that the mobile application had a significant effect on improving the participants' vocabulary knowledge and they had positive attitudes towards it.

Lawrence (2014) also used WhatsApp to teach new vocabulary items before reading texts to five undergraduate learners of Afrikaans. For a 7 week-long period, the researcher regularly posted some materials to the group that contained target words with translations and diverse types of media such as sound or image. It was concluded that WhatsApp is an effective tool for providing outside-the-classroom opportunities for practicing vocabulary especially for weak students; however, content of the teaching materials should be carefully planned.

Wu (2015) designed a mobile application called *Word Learning-CET6* to teach vocabulary to 70 Chinese college students. While the experimental group used the application, the control group only studied the vocabulary items by themselves by means of text messages. The results of the posttest at the end of the study reported a significant difference between two groups with the experimental group outperforming the control group.

Wang and Shih (2015) examined the effects of mobile application on vocabulary learning by the participants in their study. They concluded that experimental group who were taught by the mobile application achieved significantly better scores than the control group who used paper-based learning materials. Ashiyani and Salehi (2016) examined the use and effect of mobile applications such as WhatsApp on schoolwork and out of schoolwork. To this end, 60 Iranian intermediate EFL learners participated in the study. The participants were divided into two groups of control and experimental. The experimental group frequently installed WhatsApp application to learn and practice new collocations, while the control group did not use any tool to learn them. The findings revealed that the participants in the experimental group were significantly more successful in learning collocation.

Shahbaz and Khan (2017) investigated the effects of a mobile application on teaching 40 phrases from Nation and Martinez phrase test 1-5 compared to conventional activities. Results revealed that participants in the experimental group significantly outperformed on the post-test, which confirm the effectiveness of the mobile application used in this study on learning idioms. The results showed that learners in the experimental group achieved considerably better development on the post-test, representing the efficiency of the smartphone application that was involved in the study.

Ghobadi and Taki (2018) studied the effect of using Telegram stickers on EFL learners' vocabulary learning. To this end, 60 Iranian intermediate EFL learners were selected through the convenience sampling method. They were then assigned randomly to the experimental and control groups. Then, a pretest was administered to measure the learners' vocabulary knowledge in both groups. The experimental group received their lessons via Telegram while the control group experienced the conventional teaching techniques. An approved posttest was then administered to both groups in order to check the participants' possible progress. The results indicated that teaching vocabulary through Telegram stickers could lead to outstanding advantages for the learners. In other words, social networking had a positive impact on learning new vocabulary items among Iranian EFL learners.

Alakrash, Razak, and Bustan (2020) explored the effect of using Telegram on EFL students' vocabulary learning. 40 EFL students at Arabic International School in Kuala Lumpur were selected. Using a quasi-experimental design, the data was collected through a placement test, pre-post-test. Students were divided into control and experimental groups. The experimental group received their lessons through Telegram. However, the control group practiced conventional teaching methods. The data of the experimental post-test showed that Telegram is an effective teaching tool that motivates students to learn vocabulary enjoyably.

Citrawati et al. (2021) reviewed 20 manuscripts, Following George's (2008) Literature Reviews model. The selection was taken from reputable International Journals published between 2016-2020. It was revealed that Telegram had positively affected the students' four language skills in learning English. It helped the students to learn vocabularies more conveniently, improve their reading and listening comprehension, content, and organization in writing, grammar, language style, and pronunciation. Experts highlighted the relaxed and informal nature of Telegram as the main factors that contributed positively to students to reduce anxiety and raise motivation in learning. Reflecting on those positive effects of Telegram on students' progress, their study implied that Telegram may be an alternative for online learning and extensive learning of English.

As it can be seen in the above-mentioned studies, experiments with different types of mobile learning apparatuses fluctuating from SMSs to applications that were written to teach vocabulary have all been confirmed to have benefits for the learners. However, there are some controversies over this issue. On the one hand, there are many studies in favor of MALL and have numerated positive outcomes for it (e.g., Stockwell, 2010; Zhang, Song, & Burston, 2011), and on the other hand, some other studies have considered it as an ineffective or less effective technique than traditional classroom learning methods (e.g., Lu, 2008). Regarding this controversy, this study was an attempt to explore the effectiveness of Telegram application on Iranian Undergraduate Law Students' Vocabulary Learning and their attitude toward it.

3. Methodology

This quasi-experimental study is a primary research in nature in which a pretest/posttest design was employed to examine the learners' English vocabulary knowledge improvement. The participants' characteristics, the instruments and materials used, and the procedures for collecting and analyzing data are briefly explained in the following subsections.

3.1. Participants

Sixty undergraduate Persian speaking EFL law students both male and female with the age range of 19-28 who were taking classes in Islamic Azad university, Meymeh Branch, were selected from among 100 students with the same characteristics through Oxford Placement Test (OPT) in order to make sure that learners were truly homogenous in terms of their level of proficiency. Participant's gender was considered as the moderator variable of the study. The participation in the study was entirely voluntary and the participants agreed to join eagerly. To this end, in order to ensure their voluntary contribution, a consent form was filled out by the participants.

3.2. Instrumentation

In order to collect the required data, the following instruments and materials were used.

3.2.1. Oxford Placement Test (OPT)

The OPT is a kind of placement test which is a standard discrete point test for assessment of general proficiency, and to place the subjects with similar abilities in the group under investigation. It is designed to give students and teachers of English a quick way of assessing the approximate level of proficiency for all skills and subskills. In this study, the newest available version 2011 by Dave Allan was applied.

3.2.2. Pretest

A 40-item vocabulary test was given to the participants to determine their prior lexical knowledge. The test items were selected from Habibi and Hosseini (2011). The main purpose for designing the pretest was to assure that the participants did not know any of the target words of the study. The test was piloted on 20 L2 learners who were similar to those participating in the study in terms of their proficiency level. The results of Cronbach's Alpha analysis showed that the test was reliable ($r = 0.84$). The content validity of the test was checked by three experts in this field. The experts also had the experience of teaching the textbook. Finally, the decision was made on those words as the new items for the study. The allotted time for the test was 25 minutes and the participants were asked to select the best answer.

3.2.3. Posttest

The posttest was exactly the same as the pretest with the same items. In order to eliminate the probability of test effects, items were rearranged. This was done to examine whether the participants well mastered the target specific law words.

3.2.4. Questionnaire

A modified 15-item Likert scale structured questionnaire, adopted from Salehi and Habibi (2015), was given to the participants and they were asked for their attitudes toward using the mobile application used in this study, namely Telegram. The reliability and validity of the questionnaire had already been checked.

3.2.5. Telegram Messenger

Telegram was initially released in August 2013. It has a hundred million monthly active users. It is a kind of communication tool by which up to 200 people stay connected with each other at once. It can be used on laptops, desktops, and mobile phones with no restriction. Therefore, due to feasibility of use, this application was used for this teaching purpose.

3.2.6. Book

The book "504 Important Words of Law Texts", written by Habibi and Hosseini (2011) was used for teaching specific words to the students. It includes words, their pronunciations, related sentences, and test items on the taught words with an answer key. This book is one of the sources for the MA entrance state university exam.

3.3. Procedure

The study began after the researcher ascertained that participants were homogeneous in their level of proficiency via OPT. A group of 60 undergraduate law students from among 100 students were chosen. The pretest was conducted to make sure that the participants do not know the target words. The treatment started with this group for a period of 10 weeks. The lessons were posted for them via Telegram twice a week; each session twenty words were taught. The target words were presented to them in sentences with the meaning and usage of words and sentences besides the pronunciation of the words. To facilitate learning, participants faced both written and spoken pronunciation forms. The participants were encouraged by the fact that this study is beneficial for their future success in the MA exam in order to prevent them from leaving the under investigation group.

When the treatment process was completed, a posttest was conducted to see the effect of the teaching process. In this study, there is no control group and there is just one experimental group and the researcher intended to investigate the progress of the same group. The difference between males and females' performance was considered as well. Finally, a questionnaire was developed and administered to the participants to explore their attitudes toward using Telegram for learning purposes. The participants' attendance was appreciated and thanked. In order to protect the confidentiality of participants, they were just asked to mark their gender.

3.4. Data Analysis Method

To analyze the data collected in this study, Paired and Independent-Samples *t*-tests were used to answer the first and second research questions. To analyze the results of the questionnaire, a One-Sample *t*-test was run. The results are displayed in the form of tables in the next section.

4. Results

The obtained results are presented in the following sub-section.

4.1. Addressing Research Question One

This research question was conducted to investigate the significant effects of using Telegram on learning English vocabulary by Iranian law students. Therefore, the scores of the participants on the pretest and posttest were compared by a Paired-Samples *t*-test. The results of the descriptive statistics are shown in Table 1.

Table 1. Descriptive Statistics of the Results of the Pretest and Posttest

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pretest	12.22	60	1.319	.170
	Posttest	15.41	60	1.586	.204

According to Table 1, the mean score of the participants on the posttest ($M = 15.41$) was greater than their mean score on the pretest ($M = 12.22$). To make sure that this difference was statistically significant, the Paired-Samples *t*-test was conducted. The results are shown in Table 2.

Table 2. Results of Paired-Samples *t*-Test for Comparing the Results of the Pretest and Posttest

Pair	Pretest - Posttest	Paired Differences					<i>t</i>	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
1	-	3.191	1.070	.138	-3.647	-2.914	23.105	59	.000

The results clearly indicate that there was a significant difference between the scores of the participants on the pretest ($M = 12.22$, $SD = 1.32$) and posttest ($M = 15.41$, $SD = 1.59$) because the *p* value was lower than .05 ($p < .001$). Hence, the participants significantly outperformed on the posttest and using Telegram for teaching vocabulary had a significant effect on improving the participants' vocabulary knowledge. In order to analyze the results in more detail, the scores of male and female participants on the pretest and posttest were compared with each other separately.

Table 3. Descriptive Statistics of the Results of Male Participants on the Pretest and Posttest

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pretest	12.18	30	1.303	.238
	Posttest	15.70	30	1.619	.296

The results indicate that the mean score of male participants on the posttest ($M = 15.70$) was greater than their mean score on the pretest ($M = 12.18$). To make sure that this difference was statistically significant, the Paired-Samples *t*-test was conducted.

Table 4. Results of Paired-Samples *t*-Test for Comparing the Scores of Male Participants on the Pretest and Posttest

Pair	Pretest - Posttest	Paired Differences					<i>t</i>	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
1	-	3.191	1.070	.138	-3.647	-2.914	23.105	59	.000

The results show that there was a significant difference between the scores of male participants on the pretest ($M = 12.18$, $SD = 1.30$) and posttest ($M = 15.70$, $SD = 1.62$) because the *p* value was lower than .05 ($p < .001$). Hence, the participants significantly outperformed on the posttest and using Telegram for teaching vocabulary had a significant effect on improving male participants' vocabulary knowledge. Table 5 shows the descriptive statistics of female participants' scores on the pretest and posttest.

Table 5. Descriptive Statistics of the Results of Female Participants on the Pretest and Posttest

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pretest	12.25	30	1.357	.248
	Posttest	15.12	30	1.524	.278

The results indicate that the mean score of female participants on the posttest ($M = 15.12$) was greater than their mean score on the pretest ($M = 12.25$). To make sure that this difference was statistically significant, the Paired-Samples t -test was conducted.

Table 6. Results of Paired-Samples t -Test for Comparing the Scores of Female Participants on the Pretest and Posttest

Pair	Pretest - Posttest	Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
1	-	3.191	1.070	.138	-3.647	-2.914	23.105	59	.000

According to Table 6, there was a significant difference between the scores of male participants on the pretest ($M = 12.25$, $SD = 1.36$) and posttest ($M = 15.12$, $SD = 1.52$) because the p value was lower than .05 ($p < .001$). Hence, the participants significantly outperformed on the posttest and using Telegram for teaching vocabulary had a significant effect on improving female participants' vocabulary knowledge.

4.2. Addressing Research Question Two

The second research question was conducted to examine if there is a significant difference between the effects of Telegram on improving Iranian law students' vocabulary knowledge based on their gender. To this end, the scores of male and female participants on the posttest were compared using an Independent-Samples t -test. The results are shown in the following tables.

Table 7. Descriptive Statistics of Male and Female Participants on the Posttest

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Scores	Male	30	15.70	1.619	.296
	Female	30	15.12	1.524	.278

The results indicate mean scores of male and female participants on the posttest. Male participants' mean score ($M = 15.70$) was slightly greater than female participants' mean score ($M = 15.12$). The Independent-Samples t -test was conducted to examine if this difference was significant or not.

Table 8. Results of Independent-Samples t -Test for Comparing Male and Female Participants on the Posttest

		Levene's Test for Equality of Variances		t -test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
Scores	Equal variances assumed	.351	.556	1.433	58	.157
	Equal variances not assumed			1.433	57.788	.157

According to Table 8, there was not a significant difference between male and female participants since the p value was greater than .05 ($p = .157$). Therefore, both male and female participants benefited equally from Telegram to improve their vocabulary knowledge.

4.3. Addressing Research Question Three

The third research question focused on determining Iranian law students' attitudes toward learning vocabulary through Telegram. To achieve this aim, the results of the questionnaire were analyzed by a One-Sample t -test. The following tables indicate the results of the analyses.

Table 9. Frequencies and Percentages of the Alternatives Used by the Participants

	Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree
Frequencies	14	15	92	488	291
Percentages	1.6%	1.7%	10.2%	54.2%	32.3%

According to Table 9, the most frequent alternative used by the participants in the questionnaire was 'Agree' ($N = 488$) and the least frequent one was 'Strongly disagree' ($N = 14$). The results are explained in more detail in the following tables.

Table 10. Descriptive Statistics of the Questionnaire

	<i>N</i>	Mean	Std. Deviation	Std. Error Mean
Scores	60	4.135	.3531	.0456

According to Table 9, the most frequent alternative used by the participants in the questionnaire was 'Agree' (N = 488) and the least frequent one was 'Strongly disagree' (N = 14). The results are explained in more detail in the following tables. The attitude mean score of the participants was found to be 4.135, which was larger than 3.00. This implies that the learners had a positive attitude towards learning vocabulary by Telegram. To find out whether this positive attitude was of statistically significant or not, it was necessary to examine the Sig. (2-tailed) value in the One-Sample t-test.

Table 11. One-Sample t-Test Results of the Questionnaire

	Test Value = 3					
	<i>t</i>	<i>df</i>	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Scores	24.898	59	.000	1.1350	1.044	1.226

According to Table 11, there was a statistically significant difference between the participants' mean attitude score (M = 4.13) and the average value of the choices (i.e. 3) due to the fact that the p value was lower than .05 ($p < .001$). It could be thus concluded that using Telegram for learning English vocabulary significantly motivated the participants and they had positive attitudes towards it.

5. Discussion

It was found that using Telegram for teaching English vocabulary to Iranian students of law was effective and they outperformed significantly on the posttest. It was also revealed that both genders benefited almost equally from using this application in favor of learning and there was not a significant difference between male and female participants. Finally, the results of the questionnaire, which was administered to the participants, indicated that the participants had positive attitudes toward learning English vocabulary through Telegram.

Comparing the findings of this study with other studies on the use of telegram for teaching English vocabulary, the same result was found in Alakrash, Razak, and Bustan (2020) and Citrawati et al. (2021) who explored the effect of using Telegram on EFL students' vocabulary learning and found it an effective, motivating tool for learning vocabulary enjoyably.

The results of this study are also in line with the results of the study that was done by Yunus et al. (2013). They stated that using ICT in English classrooms attracts learners' attention, facilitates acquiring and memorizing vocabularies, and improves their reading and writing abilities. Since social networks like Telegram provide EFL learners with freedom and possibility of sharing ideas with other people, they can be very useful for learning English and learners can improve their general English knowledge considerably by the help of them. Besides, soon after a short period of practice and use, they know how to use the online environment to enhance their vocabulary achievement as well as other skills.

In addition, EFL learners can use mobile phones to learn English outside of the class. They also enable learners to practice what they learn wherever and whenever they want or feel it is necessary. These findings are also congruent with the results of the study done by Alzu'bi and Sabha (2013) who stated that using mobile applications to teach English to foreign language learners can significantly improve students' writing skill and vocabulary knowledge.

Foti and Mendez (2014) stated that mobile devices are very beneficial for both genders and there are not any significant differences between them. These findings are in line with the results of the current study since the participants' vocabulary knowledge was improved almost equally and their gender was not an effective factor.

They also stated that the participants in their study had a positive attitude towards learning English by mobile phones and they were interested in using them outside of the class. These results confirm the findings of the current study. Since in the present study the participants had a strong positive attitude towards learning English vocabulary through Telegram. The results of the current study are also in line with the results of the study conducted by Sandberg, Maris, and de Geus (2011) who maintained that EFL learners are motivated to use mobile applications in their free time which leads to better learning.

6. Conclusion

It can be noted that Telegram as a mobile application is beneficial for teaching English vocabulary to foreign language students. It provides learners with more opportunities of learning and practicing English vocabulary. It enables learners to follow their learning outside of the classroom and share their ideas and knowledge with each other that facilitates the process of learning for them. In addition, due to the features of this application which enables its users to post videos and pictures without the limitations of time and size, language learners can learn and memorize vocabularies more effectively. These features make language learners more interested in using this application for learning vocabulary.

As the final point, it can be concluded that Telegram as a social network is very effective in improving EFL learners' vocabulary knowledge and this social network can be beneficial for both genders. Since Telegram is interesting to most people, especially teenagers and young adults in Iran, the language teaching process can be augmented by its help. In addition, since learners can use their cellphones everywhere, they can improve their vocabulary knowledge out of class and in their spare time without getting tired or bored. However, Telegram must be used cautiously because most people consider this application a way of having fun rather than a means of learning English.

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