

Research Article

**The Effect of Using Mobile-Assisted Flipped Classroom on Iranian EFL Learners' Vocabulary Achievement**

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**Abstract**

The present study investigated the effects of flipped learning on enhancing the vocabulary knowledge of EFL learners. It also aimed to investigate the perception of the participants toward the flipped learning. To this end, 23 EFL learners from an English institute in Iran were assigned to the flipped and conventional groups. In the flipped classroom, the course materials selected by the teacher were posted via Telegram Application in advance to the class and the class time was spent on different peer and group activities including pre-communicative sentence arrangement, communicative activities, pair, and group discussion, role-play and storytelling. Multiple data collection sources, including a vocabulary knowledge test, a student-recorded portfolio, and a flipped learning experience questionnaire were employed to elicit the required data. The results revealed that the participants in the flipped learning classroom performed a little better than the participants in the conventional class; however, it was not statistically significant. Besides, they did not have a positive attitude toward flipped instruction. The authors present insights into the impacts of flipped instruction on the quality of vocabulary learning and the participants' perception of flipped learning and offer recommendations and implications for practice.

**Keywords:** flipped learning, vocabulary knowledge, telegram application, Socratic application, students' perception

## **Introduction**

The importance of learning English as the mutual communication language of many people is recognized in the world today. According to Moir and Nation (2008), many educators assumed that vocabulary teaching was trifling as it could happen by itself. Vocabulary proficiency is important in second language learning since learners through learning new vocabulary items can enhance their speaking, writing, listening, and reading (Gorjian, et al. 2011). English language instruction in Iran starts from the secondary school until the highest level at university. A traditional method of teaching English is commonly implemented in schools across Iran where EFL students start their language learning journey by memorizing vocabulary and grammar rules. This means that if students face a particular word or structure, the teacher provides them with definitions and translation. Then, they memorize the English word and its translation. Later, they try to use those patterns and vocabularies in speaking and writing. More often, the students are encouraged to consult dictionaries to find the meaning of a word. Such a method aims to emphasize the memorization of textbook content and the preparation for discrete-point items in the high-stakes National University Entrance Exam (NUEE) (Ahmadi, 2023). Fan (2003) stated that such ways of leaning result in deficient vocabulary knowledge and unsatisfactory performance in their exams.

Traditional teaching is classroom-based and consists of lectures and direct instructions conducted by the teacher. This teacher-centered method emphasizes learning through the teacher's guidance at all times (Maatu et al., 2022). According to Yap (2016), traditional teaching refers to a teaching method involving instructors and the students interacting in a face-to-face manner in the classroom. These instructors initiate discussions in the classroom, and focus exclusively on knowing content in textbooks and notes. Students receive the information passively and reiterate the information memorized in the exams.

The traditional methods of vocabulary teaching have long been criticized for not being satisfactory and effective. For example, in Grammar-Translation classes, teachers devote the majority of class time to provide explanations about usage and detailed boring analysis of words and phrases in isolation, and learners are kept passive. Li (2010) mentioned such vocabulary programs are not productive in some aspects. Students need to be given the opportunity to choose what to and how to learn. While a part of the class knows the information provided by the teacher, others lag behind the rest of the class because they may not have background knowledge or have difficulty comprehending the content taught as fast (Goodwin & Miller, 2013). All in all, traditional teaching is not in

harmony with the students' pace of learning. Educators suggested various innovative models replace traditional methods of language teaching to improve the quality of language instruction and take learners' changing needs and interests into account (Chen et al., 2017; Toto & Nguyen, 2009). Consequently, flipped learning as a response to traditional language teaching methods emerged (O'Flaherty & Phillips 2015; Obari & Lambacher, 2015). It is possible to use flipped learning classrooms with various learning methods (Flipped Learning Network, 2014). Flipped learning classrooms reverse the traditional approach to homework and lectures. In these classrooms, learners gain knowledge at home and then apply their skills in the classroom setting. They perform the preparatory work before they attend the class and form questions about the parts they do not understand and hence class time is freed for active learning practices; therefore, the teachers can make the most use of class time to discuss ideas, monitor, and correct students (Adnan 2017).

According to Flipped Learning Network (2014), a flexible environment, learning culture, intentional content, and professional educator are elements of the flipped model. In line with these four components, the current study provided both online learning platform and face-to-face instruction which allowed students to actively engage in self-directed activities outside the classroom and teacher-directed discussion and collaborative work in the class. The teacher provided audios and power-points that contained content specifically designed for the participants of the current study. Finally, the teachers were experienced educators who continually monitored learners and provided individualized feedback in both face-to-face learning condition and online learning platform. The important point about the current study is that learners were not left alone spending time unsystematically in front of a computer. The learners were continuously monitored during off-line and on-line activities. They took the responsibility for their learning, studied at their own pace, engaged in various activities and meaningful interactions instead of rote memorization, and gave and received feedback while participating, in the class activities. Therefore, with some modifications, while considering the above-mentioned drawbacks of traditional language learning, cultural consideration, and technological amenities, the flipped classroom was employed in the present study. The results of previous researches made us curious about the possible effects of the flipped learning on EFL learners' vocabulary knowledge in the Iranian context. In the current study, the researchers aimed to apply flipped instruction in teaching vocabulary to EFL learners in a way that was not done in a traditional classroom.

The purpose of this study was to examine how flipped learning affects vocabulary knowledge and the perception of Iranian EFL learners.

Therefore, the following research questions guided the study:

1. Are there any significant differences in vocabulary achievement among the participants in the flipped classrooms compared to those in the traditional learning classrooms?
2. What are the participants' perceptions of flipped learning?

## **Literature Review**

### **Flipped Learning**

Teachers have the goal of customizing learning tasks and activities to suit their students' language level and needs in order to foster their engagement and interaction, which are key components of the flipped classroom. It is acknowledged that students will not all perform at the same level; hence, teachers make necessary adjustments to their instruction and feedback. Contrary to the traditional teacher-dominated classroom, where knowledge is transmitted to learners by teachers as the only valid providers of instruction (Ahmadi & Hasani, 2018), teachers play a crucial role in facilitating the acquisition of knowledge and motivating students to actively participate in the learning process from the beginning. Also, learners should be given sufficient time to reflect on their learning and cultivate a thorough understanding and profound knowledge of a subject. In the flipped classroom learning, the teacher intentionally provides the lesson content in advance for two reasons. First, it enables him/her to evaluate the material. Second, more opportunities are available for learners to engage in various activities. For a flipped classroom to be promising, instructors need to develop certain skills, including familiarity with technology, updating classroom management techniques, and designing a flexible syllabus to meet learners' meet (Flipped Learning Network, 2014).

There are theoretical foundations including Bloom's taxonomy and the theory of constructivism that justify the flipped classroom learning (Boukerma, et al., 2023). The taxonomy is comprised of six levels of learning, ranging from remembering at the lowest level to creating at the highest levels. In the initial stage, learners strive to recognize and recall information presented by the teacher, as well as comprehend the main concepts and principles of the content they are studying. Then, learners interpret the information and summarize what

they have learned and demonstrate their understanding. In the third stage, learners practice what they have learned in previous stages in an actual situation. In the fourth stage of the taxonomy, learners engage in applying critical thinking skills to solve problems. They also have the opportunity to share their ideas with classmates, compare their answers with others, and create a summary. During the evaluating stage, learners assess the extent to which they have learned the concepts and determine the level of success in achieving their goals. In the final stage of learning, learners demonstrate the ability to design, construct, and develop new ideas based on what they have learned in previous stages (Anderson, et al., 2001). To incorporate Bloom's learning levels into the flipped classroom approach, learners first focus on the foundational levels of remembering and understanding before class. This is achieved through watching recorded lecture videos, reading materials, and engaging with other resources. Once in the classroom, learners then apply, analyze, evaluate, and create, engaging in higher-order cognitive skills. This is facilitated through peer and group activities, storytelling, discussions, and other learner-centered tasks. Flipped learning aligns with Piaget's Constructivist theory and Vygotsky's Sociocultural theory. According to these theories, teachers provide support to students in the classroom, allowing them to study and prepare at their own pace (Hamdan, et al., 2013). According to this theory, humans construct knowledge through their interaction, engagement, and collaboration with the environment and other individuals. In this theory, learners are the center of teaching and learning. According to Vygotsky (1978), learning happens when learners receive assistance from more capable individuals, such as their peers or teachers, within their zone of proximal development. In a flipped classroom, learners engage in independent and group work under the guidance of the instructor while in the classroom. They solve problems by applying the knowledge they have gained outside of the classroom through watching videos or listening to audios. Piaget's theory of cognitive development (1970) suggests that learners attempt to understand reality and construct new knowledge by experimenting with their environment. This hands-on experience allows learners to develop mental representations or schemas in their minds. Additionally, the learners have to interact with peers to achieve the accommodation of knowledge.

### **Previous Studies**

Multiple studies have investigated the effectiveness of the "Flipped Learning" approach and have found that it facilitates vocabulary acquisition in students. In a study conducted by Al Qasmi et al. (2022), it was concluded that



incorporating flipped learning into English vocabulary instruction greatly improved students' ability to learn, acquire, and retain vocabulary. Abu Safiyeh and Farrah (2020) conducted a study on the impact of flipped learning on the development of English language skills and sub-areas among EFL learners in Palestine. The experimental group was exposed to flipped learning, while the control group followed traditional learning methods. The results of the study showed that there were positive differences in English language skills and areas between the two groups, with the experimental group achieving higher scores than the control group. Hung (2017) conducted research to study the effects of flipped learning on the academic performance of a group of intermediate EFL learners without any online platform. Also, Amirousefi (2017) compared the performance of Iranian students in a flipped classroom with that of a traditional classroom. The results revealed that flipped learning can help EFL learners improve their L2 speaking and listening. Additionally, Kim (2018) conducted a study to examine the impact of flipped learning on the learning of English vocabulary among Korean university students. The findings revealed that the flipped learning group demonstrated improved vocabulary scores, unlike the control group who received the traditional vocabulary instruction.

All the mentioned studies' outcomes indicate that flipped learning is effective in enhancing the participants' language knowledge. Due to the nature of the flipped learning classroom, it has the potential to create an environment for using various individualized and group activities (Thai, et al., 2017). Researchers have conducted other studies to examine the impact of flipped learning on learners' vocabulary knowledge. Zhang, et al., (2016) investigated the impacts of vocabulary teaching strategies on freshman English majors in the flipped classroom. They compared traditional vocabulary teaching with flipped classroom vocabulary teaching. Concerning target vocabulary items, the findings suggested that students in the flipped learning program performed better than the learners in the traditional class. Kang (2015) compared the efficacy of flipped learning classroom with a regular or traditional classroom in terms of vocabulary and grammar learning. The findings suggested that there was a difference between the performances of the two classes. Both learners' grammar and vocabulary improved in the flipped classroom. However, there are studies that demonstrated flipped learning was not effective in enhancing the participants' language knowledge. Frag and Harmon (2015) examined the impact of flipped classroom instruction on undergraduate students' word study exam scores. The results suggested that there was no significant difference in the flipped model and traditional model. Also, in a study conducted by Alhamami

(2019), the effectiveness of the flipped language learning approach in a reading course was examined. The post-test results showed no significant difference. The findings suggest that both face-to-face and flipped classroom approaches can be equally effective in improving the reading skills of level 1 learners.

Furthermore, a study conducted by Mori, et al., (2016) aimed to examine the impact of flipped classroom learning on Chinese character acquisition, as compared to traditional classroom methods. The results showed that students who were introduced to the flipped classroom performed better than those in the traditional classroom whereas no statistical significance was observed for intermediate students. Moreover, Oh (2017) conducted a study to examine the impact of peer instruction through flipped learning on the class engagement and learning achievement of a group of college freshmen with limited proficiency. The findings indicated that there were no statistical differences between the flipped and non-flipped conditions in terms of engagement and learning achievement.

The findings of studies on the impact of flipped learning on EFL/ESL learners' views are conflicting. In a Chinese University EFL Course, Webb, Doman, and Pusey (2014) found that students from both the flipped and non-flipped classrooms preferred traditional teacher-fronted instruction. Choe and Seong (2016) conducted a study to investigate student perceptions of the flipped classroom in a Korean university general English course. Over half of the students believed that the flipped classroom model benefited their English studies by providing more opportunities for English communication and enhancing their understanding of the course content. However, some students expressed dissatisfaction with the flipped classroom. The results of the study by Chen et al., (2017) revealed that flipped instruction using online written and oral interaction enhanced the participants' motivation, making them more active in class. In addition, Prefume (2015) conducted a study on the impact of using a flipped classroom approach in a Japanese language classroom. The results showed that students had positive attitudes towards this approach. Similarly, Gross et al. (2015) investigated the effectiveness of the flipped classroom model on student engagement and satisfaction. They found that students in the flipped courses demonstrated high levels of engagement and satisfaction with the course. In addition, Hung (2015) explored the potential effects of flipping the classroom on English language learners' attitudes and participation levels. The findings indicated that the flipped lessons led to improved learning outcomes and more positive attitudes towards the learning experience among the students. Additionally, a study conducted by Haghighi, Jafarigohar, Khoshsima, and

Vahdany (2018) aimed to examine the impact of the flipped classroom approach on the achievement, participation, and perception of EFL learners. The results revealed that the majority of participants in the flipped classroom enjoyed learning English in this type of environment. Similarly, Frag and Harmon's (2015) study found that participants held a positive opinion of the flipped classroom model of instruction.

## **Method**

### **Participants**

To ensure the language level of the participants of the study, 23 participants were chosen based on the results of OQPT (Oxford Quick Placement Test). The selected language learners were within the age range of 19 to 23. They were at the intermediate level of language proficiency. The participating students were randomly assigned to two groups: experimental and control. In the experimental group, instructions were implemented through the flipped classroom; however, the control group received the instruction through a traditional way of teaching vocabularies. The experimental group comprised 12 students (N=12), and the control group comprised 11 students (N=11). Both classes were taught by the same teacher during the treatment.

### **Instruments**

The instruments used in the present study included a vocabulary pre- and post-test, weekly quizzes, student portfolios, and a questionnaire to gather feedback on the flipped experience.

#### **Oxford Quick Placement Test (OQPT)**

A number of tests were implemented in the current study. First, at the beginning of the study, OQPT was administered to check the homogeneity and English language level of the participant learners. This test included 60 items, and the participants were allowed to take it in 40 minutes. The reliability of the original test was reported as 0.9 for the 60-item test and 0.85 for the 40-item test (Geranpayeh, 2003). It took approximately 40 minutes for the participants to finish the test. Based on the results of this test, intermediate-level learners were identified as the target participants of the present research.

#### **A Pilot Study**

The vocabulary knowledge pretest was piloted on 15 students from another institute. The reliability value of the pretest as calculated through the KR-21 formula was  $r = 0.82$ . This teacher-made test included 28 multiple-choice (MC) items. The learners were supposed to choose the proper answer that fit the sentence as a context among four options. The pretest was implemented a week



before the treatment to measure the learners' vocabulary knowledge prior to the study.

The reliability and validity of the test were also investigated in a piloting session before embarking on the study with a group of 15 intermediate - level school students other than the major participants using the Kuder-Richardson formula (KR-21), and it was found to be 0.82. Furthermore, the validity, assessment, and appropriateness of the test content were determined by the experts in this field, which was found to be satisfactory.

#### **Vocabulary Pre- and Post-Tests**

A total of 40 multiple-choice vocabulary items were included in the pre- and post-test to assess the lexical knowledge of both the flipped and traditional groups. The researcher developed 80 vocabulary items specifically for this study, based on the content of the chosen audios. Furthermore, two teachers reviewed the test content, and the test reliability was determined to be 0.72. Finally, the test was divided into two parts - the pre-test and post-test - based on odd and even numbers.

#### **Weekly quizzes**

At the end of each week, the learners were given a total of six teacher-made quizzes which included both multiple-choice and short-answer items and were delivered to them through the Socrative application.

#### **Questionnaire**

In order to assess the participants' attitudes regarding flipped classroom learning, a researcher-developed questionnaire was used. The questionnaire included 20 questions, rated on a 5-point Likert scale ranging from strongly agree to strongly disagree. Two experts in the field reviewed the questionnaire to ensure both its content and face validity. Additionally, the questionnaire's reliability was measured and found to have a Cronbach's alpha coefficient of 0.78.

#### **Learner portfolio**

The portfolio contained a comprehensive record of the participants' activities, which included information about the materials they used and the time they dedicated to each activity during the preparatory stage at home. Additionally, an audio summary log was included.

#### **Data Collections and Procedures**

The researchers selected the Telegram application as the platform for online interaction between the teachers and study participants. With Telegram, they could effortlessly share messages, audio, video, and files. Telegram is accessible on IOS and Android operating systems, as well as the desktop version. Both

teacher and learners were familiar with this application. The researcher also chose another application named *Socrative* application. Socrative is an assessment tool based on cloud technology. It allows teachers and students to assess involvement, understanding, and progress in real-time during class. Students can complete quizzes, answer questions, and respond to reflection prompts using their own laptops, tablet computers, or smartphones. Quizzes are available in different formats, including true/false, multiple-choice, short answer, and open-ended questions. You can access them through the website or the app, which have separate versions for teachers and students. When you create a free account, teachers automatically receive access to a public room. This virtual meeting place allows teachers and students to interact. Within the public room, teachers can create, search for, copy, and edit quizzes. The application does not support video and audio files. Learners simply enter the name of the room and submit their answers, allowing you to view them instantly. The teacher can create a quiz with the questions s/he wants learners to answer. They complete the quizzes on Socrative and the teacher sees all learners' answers immediately. S/he is capable of identifying problems and effectively addressing them with the class, which helps improve their study habits. The participants were trained by the researchers to work with the application. They complete the quizzes on Socrative and the teacher sees all learners' answers immediately. He can identify problems and then provide appropriate feedback to the class. The participants were trained by the researcher to work with the application. In the flipped classroom, the learners were given the option to either listen to an audio lecture or read a PowerPoint presentation that provided instructions for their at-home tasks. These tasks were designed to help them prepare for the teacher's weekly quizzes and end-of-term assessments. Additionally, the audios delivered through the telegram application introduced the topics to be covered that week for class activities and discussion.

The audio was delivered to the flipped class via telegram one day before the class. It is important to note that only the participants in the flipped classroom had access to the audio in advance. The topics of the audios included "work-life balance", "making a decision", "an introduction to a lecture", "an interview about listening skill", "chatting about a series", "a weather forecast", "a design presentation", "a digital detox podcast", "a lecture about an experiment", "film reviews", "joining a gym", and "talk about motivation".

The topics were selected from BBC Learning English. They were not selected from their textbooks to prevent the control group from accessing the audio texts in advance. The learners were instructed to listen to the audio

recordings in order to deduce the meaning of unfamiliar words based on the context, verify the pronunciation and spelling of new vocabulary, locate synonyms and antonyms for unknown words, identify collocations, and determine the grammatical function of words before attending the class. They were also encouraged to listen to audio clips and explore recommended websites prior to the class. These pre-class activities were designed to engage learners in lower-level thinking skills, specifically remembering, understanding, and applying, as described by Anderson et al. (2001). Additionally, students were required to maintain a portfolio of their work on their personal computer or mobile device. During the pre-class stage, the learners were required to keep a record of the activities they completed and the materials they used. Each topic lasted for one week and was covered in both classes. Since the learners had already worked on the audio content, the teacher did not provide detailed explanations. Instead, during class time, students were expected to actively participate in a range of interactive activities to demonstrate their learning. The class began with addressing any questions the learners had about problems they encountered at home. Inside the classroom, a modified version of the task model proposed by Jane (1996) and Littlewood (2004) was employed to engage learners in a variety of activities, including pre-communicative sentence arrangement, communicative activities, pair and group discussions, role-play, and storytelling. These activities aimed to engage learners in higher-order thinking skills as defined by Anderson et al. (2001). In the traditional model, the teacher played the audio and gave elaborate explanations about the lesson inside the classroom. He explained grammar, unknown vocabulary items, and answered some comprehension questions related to the topic. Then, the teacher replayed the audio, paused after each statement, and had the students repeat at least one sentence. Next, the teacher checked the pronunciation and comprehension of the whole audio and the meaning of certain words. The learners in the control group completed weekly and end-of-the-term vocabulary quizzes, which were the same as those participants received in the flipped classroom.

### **Testing Procedure**

Both the flipped and traditional groups were evaluated using the same pre-test and post-test. These tests consisted of 40 multiple-choice vocabulary items, which were based on the audios that both classes had listened to. The purpose of these tests was to measure the participants' vocabulary knowledge. In addition to the tests, the participants' assessment included both off-line and on-line activities. To ensure that the participants had completed the assigned work, they

were required to record an audio summary of the audio files and submit it to the teacher. This activity served two purposes: it allowed the students to practice using the vocabulary and concepts they had learned from the audios, and it also allowed the teacher to assess their pronunciation skills. To assess the participants' perception of flipped learning, a questionnaire consisting of 20 questions was administered. The details of the instruction and testing procedures are illustrated in Table1.

**Table 1**  
*Phase-Specific Procedures for Flipped Learning*

Phase	Participants	Teacher
Multiple-choice vocabulary pre-test		
One On-line and off-line self-directed study before the class	Participants listen to audios prior to class time	The teacher delivers instructional audios to the participants.
Two On-line assignment	Participants record an audio summary of the audios and deliver it to teacher	The teacher listens to learners' audio recording and provides feedback on their pronunciation
Three On-line individualized assessment	Participants take on-line individualized quizzes	The teacher creates multiple-choice and short-answer tests, and delivers them to participants
Four Classroom participation	Learners take part in different face to face, pair and group activities	The teacher asks participants to use certain vocabularies in pair and group activities. He provides feedback on their pronunciation and vocabulary use and clarifies their misconceptions
Multiple-choice vocabulary post-test		

### Data analysis

The data was analyzed using SPSS, version 16, which is a statistical software. An independent sample t-test was conducted on the post-tests to compare the improvement in vocabulary outcome between the flipped group

and the control group members. In order to assess the participants' perception of and satisfaction with flipped learning, a questionnaire was given to the flipped class at the end of the treatment. For calculating and analyzing the data, descriptive statistics was used to show the mean scores of the flipped classroom participants for each item on the questionnaire.

### Results

In order to investigate the impact of flipped learning on the vocabulary achievement among the participant EFL learners, the study compared the scores of the vocabulary post-tests in both flipped and traditional groups (Table 2).

**Table 2**  
*Independent Sample T-Test of Post-Tests of Flipped/Traditional Groups*

Groups	N	Mean	Std. Deviation	t-test for equality of means		
				t	df	sig.
Flipped	12	14.62	1.40	.127	21	.90
Traditional	11	14.54	1.60			

As indicated in Table 2, the mean score of the flipped classroom (M =14.62) was a little higher than that of the traditional or non-flipped classroom (M=14.54); however, the difference was not statistically significant. Table 3 illustrates the results of the paired-sample t-test.

**Table 3**  
*Paired Sample T-Test of the Evaluation of Flipped/Traditional Groups*

Paired Differences	95% Confidence Interval of the Difference							
	Mean	SD	Std. Error	Mean	Lower	Upper	t	df
Flipped post-pre	4.750	1.13	.325	-5.47	-4.02	14.45	11	.000
Traditional post-pre	4.363	.924	.278	4.98	3.74	15.56	10	.000

The results of the paired-sample t-test (Table 3) suggest that both the flipped group and the traditional class scored higher on the post-test ( $p. \leq 0.05$ ). All in all, the flipped instruction did not seem to be more effective than traditional instruction concerning enhancing English vocabulary knowledge. Regarding the students' quizzes, the scores did not differ significantly between flipped and traditional classrooms (Table 4).



**Table 4**  
*Descriptive Statistics of Quiz Scores and Teaching Method*

Method	Mean	Std. error	df	95% Confidence Interval	
				Lower Bound	Upper Bound
Traditional	16.215	.159	50	15.896	16.534
Flipped	16.031	.159	50	15.712	16.350

Considering the second research question, a flipped learning experience questionnaire was employed. The results indicated that the participants did not have a positive attitude toward flipped instruction. The analysis of the questionnaire suggested that the participants did not like the flipped learning because it was not easy for them to self-pace themselves successfully through the course. Additionally, they were not motivated to learn English in a way different from their conventional English classroom, and they were not willing to introduce the flipped classroom to their friends. However, the majority of the learners were pleased with using the Telegram and Socrative app. They liked to take their quizzes and tests via Telegram and Socrative applications.

#### **Discussion**

The results of the current study demonstrated that the utilization of flipped learning in an Iranian EFL vocabulary class did not yield any significant benefits. While the participants in the flipped classroom showed slightly better performance compared to those in the non-flipped or conventional classroom, this difference was not statistically significant. In terms of the participants' attitudes, the majority of them did not hold positive views about the flipped classroom. In contrast to the findings of most prior studies, we discovered that the conventional classroom was not outperformed by the flipped classroom. In fact, the vocabulary achievement of the participants in the flipped classroom was not higher than that of the conventional classroom by the end of the project.

The findings of this study are consistent with the results of the previous studies by Al Hamami (2019), Mori et al. (2016), and Frag and Harmon (2015), which found that the flipped classroom did not outperform the non-flipped or conventional classroom. These findings also support the results of Oh (2017), who found no significant difference between the experimental and control groups. However, the results of this study contradict the findings of Kang (2015), Zhang et al. (2016), and Kim (2018), who reported that flipped vocabulary learning improved learners' vocabulary achievement. The results also do not confirm the findings of Amiryousefi (2017) and Chen et al. (2017). Therefore,

EFL teachers are advised to be cautious when implementing the flipped strategy in EFL classes. In terms of the participants' attitude towards the flipped classroom, this study's results align with Webb, Doman, and Pusey's (2014) and Choe and Seong's (2016) findings. However, the findings of our study contrast with Chen et al. (2017), Prefume (2015), Haghghi, Jafarigohar, Khoshsima, and Vahdany (2018), Gross, Marinari, Hoffman, De Simone, and Burke (2015).

Various reasons may account for the findings of the current study. EFL teachers may need special training to learn how to flip their classes perfectly, or they should train EFL learners how to use the assigned educational videos and audios, and practice individualized learning effectively. Some participants had difficulty engaging in in-class activities because they didn't have enough preparation. They could not engage in self-paced learning because they lacked appropriate training to adapt to the new learning environment. Many participants neglected in-class engagement and out-of-class preparation because they thought the final score was more important than classroom activities. It contrasts Lee and Wallace's (2017) findings that reported students in the flipped classroom were more active than participants in the non-flipped classroom. This may be due to prior learning experience in Iran that emphasized the end-of-term score as a measure of language knowledge. The flipped classroom is designed to move instructional materials outside of the classroom, allowing for increased learner engagement and interaction between teachers and students. However, some participants expressed their unfamiliarity with flipped learning and their dislike of learning before class. Another issue with the flipped classroom was related to time management. In a traditional classroom setting, designated class time was used for learning. In the flipped classroom, however, students had to determine when and where to study on their own. Not all learners were able to effectively do so. Additionally, while the participants were required to keep a record of their activities outside the classroom and participate in online quizzes, there was no way to ensure that students were adequately prepared before class or actively participating during class. As a result, attending class became less beneficial, as students had to sit through class time instead of engaging in tasks and discussions. The participants argued that the traditional classroom was more helpful because the teacher would explain the textbook content, making it easier for them to understand. Some participants agreed that self-study was not effective while others believed that flipped learning was helpful for enhancing active learning rather than improving language knowledge. This aligns with the findings of Haghghi, Jafarigohar, Khoshsima, and Vahdany's (2018) study,

which reported that students in the flipped classroom were more actively involved compared to those in traditional Iranian EFL classes.

Some participants claimed that in order to achieve good scores, they needed to read the material during class, but the flipped learning approach did not provide enough time for this. A few participants mentioned that different teaching methods did not impact their scores, as it all depended on their effort in studying. They considered online audios or videos to be time-consuming, unnecessary, and unhelpful, resulting in either not listening to them or spending minimal time on them. Before our participants entered into the flipped classroom, they were willing to experience self-paced flipped learning, but when the project ended, they had adverse views; they did not regard it as a useful experience. The participants in the flipped classroom argued that they favored traditional classroom since the pre-class activity was extra work for them. Many learners thought that in-class tasks and activities in the flipped learning classroom were more interesting and livelier than pre-class activities but did not lead to vocabulary achievement. They believed it took them too much time to perform out-of-class activities, and too much homework was a burden to them in the flipped classroom. They commented that they had more fun in the flipped classroom because they could visit websites and talk with their teacher and classmates (52%) and it helped them reduce the feeling of boring and tension. Contrary to Amiryousefi's (2017) study that showed participants usually accept classroom technology, only about 9 percent of the participants in the current study agreed to recommend learning through technology to a friend. They were distracted when searching for materials on-line and couldn't watch videos or listen to audios for the next class. 50 percent of the participants in the flipped classroom stated they did not like listening to or watching their lessons through platforms in the future because they couldn't afford the computer and internet expenses. About 53 percent mentioned that they listened to audios or watched the videos in the current study because they were required to do so, but only 25 percent believed learning through audios and videos improved their vocabulary learning. 50 percent agreed or strongly agreed to take their quizzes through Socratic and telegram because they thought it was easy and applicable. Only 8 percent were motivated to learn English in a way different from their regular classroom. Although the majority of the participants (56%) commented that the traditional class didn't have suitable tools for supporting their learning, they didn't favor flipped learning. In general, the learners did not favor the flipped classroom. In summary, several reasons may account for the inefficiency of the current flipped classroom.

The flipped classroom might not have been motivating enough to encourage the participants to spend more time and effort. Additionally, some participants reported they did not have access to a computer and the internet. Finally, many participants were not convinced to practice self-paced study and to accept the required time and work commitments.

### **Conclusion**

In short, the results of the present study suggested that flipped learning enhances the participants' vocabulary achievement, but it was not statistically significant. Although in the flipped classroom learners spent a considerable amount of time at home to do assignments, the outcome was almost the same in both final exams and weekly quizzes. Considering the participants' perception of the flipped program, the majority of them did not like the flipped learning. They believed out-of-class preparation was an extra load to them but face to face teacher explanations about the lesson contents were helpful.

This study has valuable implications for those EFL teachers who want to introduce flipped classrooms to their students and e-content developers, as there are many factors to consider when preparing such materials including the students' needs, preferences, learning styles, etc.

There are certain limitations of this study that need to be acknowledged. At the time of the study, random sampling was impossible due to the nature of course registration. It was not feasible to conduct this research with a larger sample size. The study could be replicated with more participants to confirm that the results were not biased by sample size. Even though the results did not prove promising, replication researches are required to make generalization of the findings beyond the context of the present study. The present study investigated the effects of flipped instruction on the lexical outcome of EFL learners through listening to audio clips. Future researches could be practiced with other language skills and components.

**Declaration of interest:** none

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#### Biodata

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تأثیر استفاده از کلاس درس برگردان با کمک تلفن همراه بر پیشرفت واژگان زبان آموزان ایرانی  
زبان انگلیسی

ظهور یادگیری معکوس یا وارونه فرصت های جدیدی را برای بهبود کیفیت یادگیری زبان انگلیسی فراهم کرده است. ابتدا، پژوهش حاضر سعی در بررسی تأثیرات یادگیری معکوس بر افزایش دانش لغوی فراگیران زبان انگلیسی دارد. دوم، هدف آن بررسی درک شرکت کنندگان نسبت به یادگیری معکوس بود. بدین منظور، 23 زبان آموز زبان انگلیسی از یک مؤسسه زبان انگلیسی در ایران در گروه های آموزش معکوس یا وارونه و معمولی قرار گرفتند. در کلاس یادگیری وارونه، مطالب درسی انتخاب شده توسط استاد قبل از کلاس درس از طریق اپلیکیشن تلگرام برای فراگیران ارسال می شد و زمان کلاس صرف فعالیت های مختلف کلاسی و گروهی از جمله تهیه

جملات پیش ارتباطی، فعالیت های ارتباطی، بحث دونفره و گروهی، نقش آفرینی و قصه گویی می شد. روش های متعدد جمع آوری داده ها از جمله آزمون دانش واژگان، نمونه کارهای ضبط شده توسط زبان آموزان، و پرسشنامه تجربه یادگیری وارونه برای استخراج داده های مورد نیاز استفاده شد. نتایج نشان داد که شرکت کنندگان در کلاس درس یادگیری معکوس کمی بهتر از شرکت کنندگان در کلاس معمولی عمل کردند. اما از نظر آماری معنی دار نبود. علاوه بر این، آنها نگرش مثبتی نسبت به آموزش های معکوس نداشتند. نویسندگان نظراتی را در مورد تأثیرات آموزش معکوس بر کیفیت یادگیری واژگان و درک شرکت کنندگان از یادگیری معکوس ارائه می کند و توصیه ها و مفاهیمی را برای تمرین ارائه می دهد.

واژگان کلیدی: یادگیری وارونه، فراگیران زبان انگلیسی، یادگیری واژگان، نرم افزار تلگرام، درک واژگان

