



The Effect of Gamification on Developing EFL Learners' Vocabulary Learning in Flipped Classes

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Abstract

Giving consideration to the importance and on-going challenge of vocabulary learning, there is an increasing demand for seeking out new approaches that correspond well with the needs of digital natives. With the rapid advance of technology, deploying innovative approaches such as gamified and flipped mobile- assisted language learning is gaining worldwide popularity. The current study was an attempt to scrutinize the effectiveness of integrating gamification with flipped approach on EFL learners' receptive vocabulary learning. With the aim of carrying out this research, 68 EFL high school students were randomly allocated into an experimental and control group. The required data were gathered by means of pre- and post- tests. Moreover, the obtained data were analyzed through descriptive and inferential statistics including two paired, and one independent samples t-tests. Quantitative findings revealed that the experimental group participants outperformed their non-gamified coequals. Additionally, as post-test scores showed tremendous improvement, it was found that both aforesaid approaches were devastatingly effective in enhancing EFL learners' vocabulary development. The results of this study can be useful for EFL instructors and teachers for giving them insights on how to employ flipped approach for teaching receptive vocabulary.

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1. Introduction

Nowadays, Information and Communication Technology (ICT) has become an inseparable part of our personal and social lives which can influence our professional career. The advent of ICT has changed the educational process in 21st century learning. (Harendita, 2013).

The rapid development of educational technologies in recent years has paved the way for the researchers and instructors to integrate ICT tools into the educational contexts which have a great impact on students' learning (Semich & Copper, 2018). Integrating ICT tools in educational pedagogy is regarded as Technology- Enhanced Language Learning (TELL). The main purpose of TELL is using technology to improve and facilitate educational outcomes in mainstream of curriculum development (Golshan & Tafazoli, 2014).

Seeking approaches to maximize engagement is the pivotal criterion in vocabulary learning (Schmitt, 2008). To express differently, more the learners get engaged with new words, there is more possibility for them to learn. Learners need willingness and tendency to have an active role over a long period of time, otherwise, acquiring substantial vocabulary size can't be achieved. This implies that implementing some new techniques, methods, and approaches which increase learners' active role in vocabulary learning is required. Counting young generations as digital natives (Prensky, 2001), vocabulary learning can be presented with making use of technology.

Incorporating technology in language teaching and learning has contributed to emerging new approaches such as Computer-Assisted Language Learning (CALL), Mobile-Assisted Language Learning (MALL), flipped learning, gamification, etc. Considering the benefits and affordances that MALL offers, integrating mobile devices appropriately into learning-teaching process can bring about a permanent revolution in educational realm. MALL affords the practicality of applying the combination of two relatively new models, i.e., FC and gamification, both inside and outside of the classroom. As stated by Strayer (2012), inverted (flipped) classroom uses technology to transfer lectures outside the class and uses learning activities to practice the learned concepts inside the classroom. Training learners how to learn within flipped classes contributes them to go beyond the surface level of learning and change them to be more autonomous.

Due to the fact that students with higher level of motivation perform better than their fellows with low motivation, introducing gamification as a means of increasing learners' engagement and motivation can be very effective in language learning context (Göksün & Gürsoy, 2019). Lee and Hammer (2011) announced that gamification can not only engage the participants, but also enable them to achieve established goals through the use of game mechanisms and dynamics. Gamification has become a favorite technique which has a great impact on learning and motivation (Yildirim, 2017; Li, 2021). Particularly, in this study, the employment of gamification will occur within flipped classes in order to develop a type of blended learning, through which learners can benefit from the merits of both models.

Although many studies were conducted on the discipline of gamified- flipped approach (Zainuddin, 2018; Gündüz & Akkoyunlu, 2020; Ho, 2020; Sailer & Sailer, 2021), there is a gap in the literature with relatively little research carried out in the field of integrating gamification in flipped classes in an Iranian context. Straightforwardly, no consensus has been

established in relation to combining gamification with flipped approach to examine its effectiveness on developing EFL learners' receptive vocabulary learning. As far as EFL context is concerned, currently there is a perceived need for more rigorous research studies aimed at shedding lighter on the incorporation of gamification in flipped classes to assess Iranian EFL learners' receptive vocabulary learning. Thus, to address the objective of the study, the following research questions were proposed:

RQ1- Is there any significant difference between gamified-flipped approach and non-gamified flipped instruction regarding EFL learners' receptive vocabulary learning?

RQ2- Does the incorporation of gamification in flipped classes enhance EFL learners' receptive vocabulary learning?

RQ3- Does flipped approach affect EFL learners' receptive vocabulary learning?

2. Literature Review

2.1 Theoretical Review

For the duration of the past few decades, flexible and blended teaching models such as flipped approach and gamification have turned out to be engrossing notions in educational realm. Flipped approach is a pedagogical concept in which traditional lecture-based instruction is replaced with a chance for learning from outside of the class autonomously. In addition, Strayer (2012) defined FC as a kind of blended learning which transfers instruction outside the class and uses class time for more dynamic activities. Gamification is one of the approaches that seems to encourage deep learning of students. Therefore, it has been the focus of many researchers in recent years (Göksüna & Gürsoy, 2019; Waluyo, & Bucol, 2021; Li, 2021).

In the framework of theoretical background, the integration of gamification with flipped approach in the experimental group can be well explained through placing reliance on Self Determination Theory (SDT). Centered on SDT, three main elements of autonomy, competence, and relatedness stimulate individuals to attain higher level of motivation, as well as illustrate more engagement in learning (Deci & Ryan, 2002). Considering constructivism theory of flipped learning and SDT of gamification, there is an overlap which highlights learners' self-directed and autonomous learning. Instructing learners through gamified-flipped approach trains them to learn autonomously and independently. This combined strategy also makes provision for mastering receptive vocabulary both outside and inside the class via flipped and gamification approaches respectively. Inside the classroom setting, the learners are supposed to collaborate and interact with their peers and instructor to play *Vocabulary Builder by Magoosh* mobile game application and do other dynamic activities. This can be attributed to relatedness feature of SDT. Moreover, the game mechanisms of the chosen application also support the three intrinsic needs of students. For instance, badges and progress trackers, which provide learners with feedbacks, are aligned with competence element. The mechanism of levels-up supports autonomy, and teammate component, through which users interact with other players, serves as a basis for relatedness (Sailer et.al, 2017). In summary, as three major elements of SDT are met within gamified-flipped learning, the learners are highly motivated to get involved in class activities and also to grasp the concepts of the course better (Giesbers et.al 2013).

2.2 Empirical Review

An explanatory sequential mixed-method design study was carried out by Zainuddin (2018) which aimed to explore the effectiveness of gamified-flipped classroom instructional model on students' learning performance and perceived motivation based on the Self-Determination Theory (SDT). The participants of the study comprised of 29 students in the gamified- flipped (experimental) group, and 27 students in the non-gamified flipped (control) group. Three formative assessments or post-tests only design was used to examine students' learning achievement. Questionnaires and personal interviews were deployed for evaluating students' perceived motivation. It was concluded that gamified-flipped instructional model affected the students' scores, competence, performance, and motivation. Furthermore, it was found that the gamified-flipped approach taught students how to explore information independently outside the class which led to increasing their autonomy, technological literacy, self-paced learning, and critical thinking skills.

In a mixed-method sequential explanatory design study, Gündüz and Akkoyunlu (2020) examined the effectiveness of using gamification in the online environment of flipped learning in order to diagnose whether it will increase interaction data, participation, and achievement or not. The gamification was employed in the learning environment of the experimental group, while the control group didn't access the game components. The results showed that the integration of gamification into online environment of flipped learning led to higher scores in terms of interaction data, participation, and achievement in the experimental group with comparison to the participants' scores in the control group.

With respect to the same line of research in order to examine motivation in a gamified-flipped class, Ho (2020) conducted a study in Chinese context. The study was an effort to investigate Hong Kong university students' attitudes toward gamified- flipped classes, as well as the students' understanding of the taught narrative concepts. The researcher also examined teaching English narrative genres by integrating story making and storytelling, the combination of digital drawing with active learning approaches. The participants of the study consisted of 50 university students who were distributed into non-gamified flipped group (control group) or gamified flipped group (experimental group). Both groups were required to watch the same narrative-structure online videos and read the notes about the narrative structure provided by the teacher before joining the class. However, the participants in the experimental group were asked to participate in a game called "*draw anything*". The results obtained through surveys, interviews, and narrative writing scores showed that gamified-flipped approach enhanced students' learning, academic engagement, and learners' autonomy. Moreover, it was found that gamified-flipped model reduced students' anxiety and reticence toward using English.

In an experimental pretest and posttest design study, Michael Sailer and Maximilian Sailer (2021) investigated the effects of gamified-flipped classroom intervention on students' learning and motivation. The experimental group, who were engaged in gamified in-class activities, were required to use a gamified quiz. However, the control group engaged in non-gamified in-class activities deploying exercise sheets. 205 twenty-three-year-old participants took part in the study. The findings revealed that immediate task-level feedback which was provided by the gamified quizzes enhanced learning process performance.

3. Method

3.1 Participants

This research concentrated on the population of EFL youth who were 11th-grade students at a public school (the name will be revealed for the final version), in scholastic year 2021-2022. All the participants were female learners, majoring in experimental science field of study, whose ages spanned between 15 and 16 years of age. Based on the *Convenience Clustered Sampling* technique, a Quick Oxford Placement Test (QOPT) was administrated to 91 learners, among whom 68 students with intermediate level of language proficiency were selected as the target sample.

3.2 Instruments

3.2.1 Quick Oxford Placement Test

The first instrument in the current research was QOPT which was used with the intention of choosing homogeneous students. This test yielded to providing a quick, reliable and also accurate measurement of test takers' ability according to Common European Framework of Reference (CEFR).

3.2.2 Pre- and Post-Tests of Vocabulary

The second tool used in the current research was administrated twice, measuring the learners' level of knowledge before and after the intervention. This test comprised of three parts: the first part, evaluating learners' receptive vocabulary knowledge through listening skill, included 10 multiple choice questions. The second part contained 20 multiple choice questions for which the learners were supposed to read the sentences themselves and choose the best option. The last section contained 10 fill-in-blanks sentences. The score of each correctly selected item was 0.5, which makes the total test score of 20 points. The test was tailored by the researcher(s) and its reliability and validity were piloted by a group of 11th-grade students (N=18), similar to the participants of the study, in another high school. The reliability of the test was calculated via KR-21 formula, for which the value was $r=0.81$. The pre-test was administrated to both control and experimental groups in order to measure test takers' receptive vocabulary knowledge prior to treatment. The post-test was taken with the similar intention of assessing learners' receptive vocabulary competence following the intervention. It's worth saying that both pre- and post-tests were similar in content, parts, and points, excepting the order of the questions and the correct answers.

3.2.3 Vocabulary Builder by Magoosh Game Application

The last used instrument was a mobile game application called *Vocabulary Builder by Magoosh*. One of the classifications of this application is entitled *English Learner Words for TOEFL and IELTS*. The words covered in this part matched up with the target words of the study, so it was chosen to be center of attention for fulfilling the objective of the research. These words are consistent with almost the target words, ranging from B1 to B2 in CEFR. The provided definitions of the words as well as example sentences, which facilitates learners' understanding, are succinct, accurate and comprehensible. Furthermore, there's an accessibility feature of listening to the correct pronunciation of words. Regarding the fact that repeated exposures to lexical items fosters learning (Schmitt, 2008), this application maximizes being exposed to target words frequently by presenting a word many times till it's learned. Among

game elements and components, this gamification application encompasses badges, progress trackers, levels-up, and teammates. Badges in this app function as feedback mechanisms that inform the users about their performance on the game. About levels-up element, the three levels in each part will be unlocked only if the users can successfully complete one level before moving to the next one. Another interesting aspect of this game is related to teammate component. In this regard, after unlocking all three levels of a part, the application allows the user to find a random opponent and play. This feature leads to creating a competitive environment that plays a crucial role in increasing learners' engagement and motivation. Teammate element embeds another component, called progress trackers which shows the user the number of completed competitions as well as the results.

3.3 Procedure

In the matter of ethical issues, a permission was given by the principal of the High School. In addition, the participants' approval was gained by means of a consent form document, which recorded the students' voluntary participation in the study. The research was carried out at the beginning of April 2022 and lasted for two months. At first, a QOPT was implemented to select homogeneous learners with intermediate level of English language proficiency among ninety-one volunteer students. According to the QOPT output, a sixty-eight-member target sample was chosen. The participants were randomly divided into experimental ($n=34$) and control groups ($n=34$). As the next stage, WhatsApp, through which the learners could access to the materials in FC, was chosen. So, the students of the experimental and control groups were asked to install this social network application on their mobile phones and then were added to two different groups on WhatsApp separately. Afterwards, the researcher, who was the teacher at the same time, gave a brief introduction of the course, its aims and also the principles of FC. The participants knew that their first exposure to target words would occur outside the class through flipped approach. They were also justified about the prerequisite of studying the contents at home before attending the class, because the class time would be allocated to questions, answers, and more dynamic practices. Next, a pre-test of vocabulary was administrated to both control and experimental groups to assess the participants' vocabulary knowledge prior to the treatment.

Regarding the treatment period, eighty target words were chosen to be taught. Both experimental and control groups were taught in two parallel classes by the same teacher during eight sessions. In the experimentation period, both groups had seventy-minute English class every week and were instructed through flipped approach. The teacher generated videos and images, that included synonyms, antonyms, definitions, example sentences, and also the correct pronunciation, for each lexical item. These teacher-made multimedia materials were sent to the WhatsApp groups three days before each session. The students were supposed to study the sent materials before attending in-person classes, therefore, they studied vocabulary sets independently at home. So, the way of instruction was quite similar for both experimental and control groups outside the class, however, the employment of vocabulary techniques for more practicing inside the class was different.

To fulfill the purpose of the study, the students in the experimental group were allowed to bring their mobile phones in the class. On the first session, these learners were trained how to

download *Vocabulary Builder by Magoosh* application and how to play this game. As depicted in Figure 1, during the class time, the first 10 minutes of each session were assigned to clarifying misconceptions. So, the students could propound and discuss their questions in their groups. After being monitored, the teacher provided the whole class with constructive feedbacks on students' problematic questions. Subsequently, questioning and answering took place about 15 minutes. In this stage, some questions were asked by the teacher in order to verify whether the students had watched the videos and read the sent materials or not. Students were also supposed to have their notes for participating actively in class activities. Next, the students got 15 minutes to play the mentioned game on their mobile phones individually. Besides, they got 15 next minutes to find random opponents and play with other players competitively. Regarding this phase, the learners could either compete with their group mates or assist each other to win the game. In the last 10 minutes, each group had to deliver a mini presentation by providing a text or an audio file to review the learned vocabulary items through receptive skills.

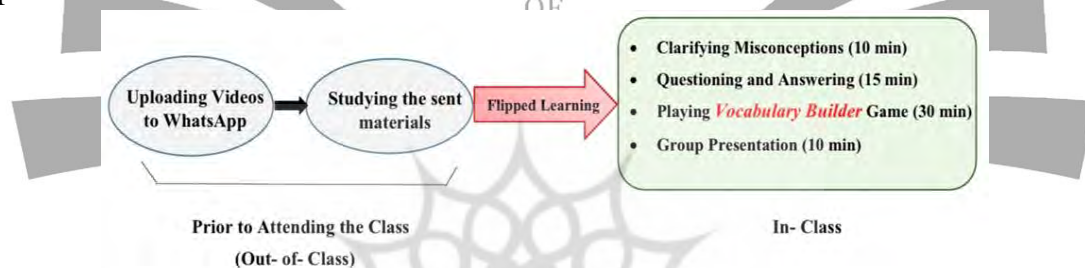


Figure 1. Gamified- Flipped Learning Structure for the Experimental Group

Contrary to the experimental group, the learners of the control group practiced the learnt vocabulary sets via conventional vocabulary techniques. As it is illustrated in the following figure, first 10 minutes of each session were allocated to illuminating misconceptions in order to help learners to overcome any obstacles to learning. Following 15 minutes associated with questioning and answering, through which the teacher could ensure whether the learners had studied the sent materials or not. Next, the students were provided with different worksheets and practice exercises in 30 minutes. During the last 10 minutes, one group was responsible for presenting a mini presentation, through which the learned vocabulary sets could be reviewed via receptive skills. Therefore, this group was taught via non-gamified flipped approach.

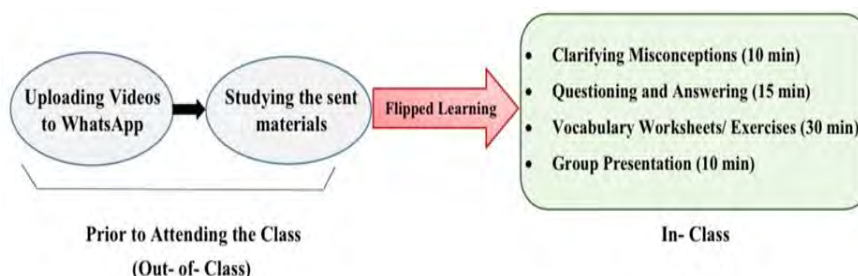


Figure 2. Gamified- Flipped Learning Structure for the Control Group

Four days after the last treatment session, all participants took a post-test of vocabulary. This test was carried out in order to assess learners' vocabulary learning throughout the

experimentation period. Finally, the scores of pre- and post-tests were analyzed to find out whether the incorporation of gamification into flipped classes can enhance EFL learners' vocabulary learning or not.

3.4 Data Analysis

To fit the design of the study, data were collected through quantitative gathering tools. So the scores of the participants were submitted to Statistical Package for Social Sciences (SPSS) version 21 in order to make an inferential conclusion out of the obtained data. First, normality tests were used to measure whether the data are distributed normally or not. Then, the scores of pre- and post- tests for both groups were compared and analyzed through T-test formulas. In order to find the answer to the first research question, one independent samples t-test was administrated to find out the within group differences before and after the treatment. To answer the second and third research questions, two paired samples t-tests were run to find out the effectiveness of the intervention for each group in terms of receptive vocabulary learning.

4. Results

For drawing preliminary and meaningful conclusions on pretest scores, the descriptive analysis was run for both groups.

Table 1. Descriptive Statistics of Pre-test of Receptive Vocabulary

Group	N	Mean	Std. Deviation	Std. Error Mean
Control Group	34	14.3088	1.10106	.18883
Experimental Group	34	14.1176	1.19379	.20473

As it is presented in Table 1, the number of students in each group was 34. Considering the control group, the pre-test mean was 14.30 with standard deviation of 1.10. The mean score of students in the experimental group was 14.11 with standard deviation of 1.19. To express differently, the mean scores of the two groups was highly similar, which showed fairly equal level of knowledge before the treatment. Therefore, it can be inferred that the learners of both groups performed rather homogenously on the pretest.

Table 2. Descriptive Statistics of Post-test of Receptive Vocabulary

Group	N	Mean	Std. Deviation	Std. Error Mean
Control Group	34	17.3529	1.33445	.22886
Experimental Group	34	18.5294	1.01460	.17400

Looking at Table 2, the performance of the two groups on posttest is provided. The mean score of students in control group was 17.35 with 1.33 of standard deviation. However, the mean scores obtained from learners in experimental group was 18.52 with standard deviation of 1.01. In contradiction of pretest descriptive analysis, there's a remarkable distinction between the mean scores of the two groups. Taking a glance at the above table, the learners of the experimental group had higher mean score than their counterparts in the control group. Nevertheless, more comprehensive analysis will be achieved by means of an independent samples t-test on posttest scores in the following section.

Subsequent to analyzing descriptive statistics of both control and experimental groups, two normality tests were employed for each group separately before and after the intervention to arrive at a conclusion that whether data are distributed normally or not.

Table 3. Normality Test of Pre-test of Receptive Vocabulary

Group	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	Df	Sig.
Control Group	.140	34	.090	.947	34	.098
Experimental Group	.137	34	.105	.943	34	.076

Regarding the Table 3, the *P* value of Kolmogorov-Smirnov for control and experimental groups is .090 and .105 respectively. In addition, relying on Shapiro-Wilk, the *P* value of control group was .098, this value for the experimental group equaled to .076. All of these values are above 0.05 which revealed that the distribution of pre-test scores of both groups were normal. Thus, using parametric tests for finding the answers to the research questions was quite safe and sound.

Table 4. Normality Test of Post-test of Receptive Vocabulary

Group	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Control Group	.139	34	.095	.960	34	.239
Experimental Group	.135	34	.117	.937	34	.051

As it can be observed in Table 4, the obtained *P* value of Kolmogorov-Smirnov test for control group was .095. The similar value for posttest scores of the experimental group was .117. With respect to the Shapiro-Wilk test, the *P* values of control and experimental groups were .239 and .051 respectively. If the obtained values are equal to or larger than 0.05, it can be inferred that data were distributed normally. Therefore, it can be inferred that the posttest scores were normally distributed which paved the way for using parametric tests for comparing the groups.

An independent samples t-test was utilized to deliver useful information through which the answer to the first research question could be found. Preceding the conduction of an independent samples t-test on participants' receptive vocabulary posttest scores, checking equality variance assumption is a prerequisite. The results of this test is provided in the following table:

Table 5. Leven's Test of Equality of Variance on Posttest Scores

Variable	Levene Statistics	df1	df2	Sig.
Receptive Vocabulary	3.019	1	66	.087

As it is demonstrated in the Table 5, the obtained *P* value was .087. This value is larger than the threshold of 0.05 (Sig.= 0.87 > .05). Considering the result, variances were assumed to be equal, so the assumption of equal variance is not violated.

Subsequent to validating equal variance assumption on posttest scores, an independent samples t-test was applied on participants' post-test scores to answer the first research question as follow:

Table 6. Independent Samples t-test on Posttest Scores

Posttest Scores	T-test for Equality of Means				
	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Equal Variances assumed	-4.092	66	.000	-1.17647	.28749

As Table 6 disclosed, *P* value (Sig. (2-tailed)) equals to .000 which is remarkably less than 0.05. Consequently, there's a significant difference in the mean receptive vocabulary posttest scores between the two groups. To put it another way, the participants who were taught through gamified-flipped approach performed better than those who experienced non-gamified flipped instruction. In addition, regarding the obtained eta squared ($\eta^2 = 0.20 > 0.14$), it is obvious that the effect size was large. So, 20% of the variance in receptive vocabulary posttest scores is explained by gamified-flipped approach. Therefore, it can be inferred that there's a visible distinction between learning receptive vocabulary through gamified-flipped approach and non-gamified flipped model.

Seeking out the answer to the second research question, a paired samples t-test was performed on the scores of experimental group's pretest and posttest. Analyzing the obtained data in this regard would be possible through focusing on the table below:

Table 7. Paired Samples T-Test for Experimental Group

Experimental Group	Paired Differences					
	Mean	Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)
Pre- and Post- Test Scores	-4.41176	1.31120	.22487	-19.619	33	.000

As shown in Table 7, *t* value is -19.619, degrees of freedom ($df=33$), mean difference in the two sets of scores is -4.41166 with standard deviation of 1331120, and large effect size ($\eta^2 = 0.92 > 0.14$). Taking *P* value (= 0.000) into consideration, this value is lower than the threshold of 0.05, as a result, it can be concluded that there is a significant difference between the scores of receptive vocabulary pre- and post- tests in the experimental group. In other words, experimental group's receptive vocabulary scores before and after the interval were statistically different. Therefore, it can vividly be induced that the emergence of gamification in flipped classes can affect EFL learners' receptive vocabulary learning.

With the intention of answering the third research question, another paired samples t-test was applied on the scores of participants in the control group. A thorough analysis of the data presented in Table 8 will give the resources to figure out about the effectiveness of flipped approach on EFL learners' receptive vocabulary learning.

Table 8. Paired Samples T-Test for Control Group

Control Group	Paired Differences					
	Mean	Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)
Pre- and Post- Test Scores	-3.04412	1.57330	.26982	-11.282	33	.000

The results of performing a paired samples t-test on pretest and posttest scores of participants in the control group demonstrated the mean of -3.04412, standard deviation of 1.57330, with large effect size ($\eta^2 = 0.79 > 0.14$). Regarding the *P* value provided in the last column (.000 < .05), there's a significant difference between pretest and posttest scores of participants in the control group. That is to say, the application of flipped approach, without its integration with gamification, can enhance EFL learners' vocabulary learning.

5. Discussion

In the current research, the researcher(s) tried to find the impact of gamification on EFL learners' vocabulary achievement in the context of flipped learning. Centering on the first research question, the findings of this paper demonstrated that teaching vocabulary through gamified- flipped approach yielded to better results than via non-gamified flipped model. Expressly, there was a significant difference between the performance of learners in the experimental and control groups. This finding is consistent with the results of a study conducted by Huang et.al (2019) that investigated the effect of gamification on learners' engagement in flipped classes in two groups: gamification-enhanced flipped learning group (experimental) and non-gamified flipped group (control). After the intervention period, they came to the conclusion that the students of the experimental group performed better than those in the control group. Similarly, the efficacy of gamified- flipped approach was explored in a study carried out by Gündüz and Akkoyunlu (2020). In this research, the effect of utilizing gamification in online environment of flipped classes on learners' achievement, participation, and interaction data was explored. The obtained results showed that experimental group attained higher scores in comparison with learners in the control group. Last but not the least, the findings of another study by Sánchez et. al (2020) were in harmony with the results of the current research. They used a quasi-experimental research design to probe the effectiveness of using the combination of gamification with FC comparing to isolated use of flipped approach in the subject of Spanish language. The findings of the research determined that the integration of gamification into flipped approach led to the enhancement of motivation, interaction with students, and also interaction with teacher.

Based upon the second research question, it was found that gamification affects positively the performance of students in the context of flipped approach. In this regard, a study ran by Sailer and Sailer (2021) support the obtained answer to the second research question. The focus of their study was to explore learners' motivation and learning in gamified-flipped classes. In this experimental research, it was found that gamified-flipped approach has an effect on learners' learning and motivation, which is exactly in line with the result of this paper. In agreement with the found answer to the second research question, another research conducted by Li (2021) analyzed the influence of a game-based application on Chinese learners' vocabulary learning, motivation, and self- confidence. The results revealed that the learners of the experimental group achieved higher performance in terms of vocabulary learning, self-confidence, and motivation than the participants who were taught through conventional paper-based wordlist learning. Additionally, Boyinbode (2018) developed a game-based English vocabulary learning mobile application to examine learners' vocabulary learning. The findings revealed that the students' vocabulary learning as well as their learning interests were promoted

by the implementation of gamification techniques. In accordance with the effect of gamification on vocabulary learning, Waluyo and Bucol (2021) conducted a study to explore the effect of *Quizlet* on vocabulary learning. Through a two-cycle procedure of learning, it was proved that this gamification tool enhanced the vocabulary competence of low-proficient students. As the last evidence, Hosseinpour Emam and Roslin (2021) conducted a study to evaluate EFL learners' vocabulary learning and retaining through deploying digital-game-based language learning. In line of the result of the current research, it was disclosed that the scores of learners in the experimental group before and after the intervention significantly increased.

Ultimately, focusing on the third research question and the obtained results evolved from a paired samples t-test on the scores of participants in the control group, it was discovered that the independent deployment of flipped approach enhanced learners' vocabulary achievement. This outcome is in analogy with a previous study ran by Knežević et.al (2020) who analyzed the efficacy of flipped approach on learners' acquiring English for Academic Purposes vocabulary compared to the conventional teaching approach. Particularly, the results indicated not only better performance of experimental group learners, but also more positive perceptions toward flipped approach were recorded. In addition, addressing recalling and retaining vocabulary in the context of EFL, better accomplishment of the flipped approach group against the conventional model was supported by Soltanabadi et.al (2021). The confirmation of positive influence of FC in this paper is in agreement with the findings of a research by Amiryousefi (2019), who attempted to evaluate EFL learners' L2 speaking, L2 listening, and engagement within flipped classes. The results of this study demonstrated that FC assisted EFL learners to improve their listening and speaking skills, as well as make them more engaged and interested in materials and activities. Not least of all, Seitan et.al (2020) carried out a study to analyze the effectiveness of the combination of flipped learning with ICT on the academic achievement of secondary school students, as well as their perceptions toward it. The outcomes of this study are compatible to the drawn results of this study, which highlights the enhancement of learners' achievement through flip-classroom pedagogy. However, the findings a study administrated by Fassbinder et. al (2014) showed that at first the participants' motivation and engagement increased within flipped context of learning, but this gradually lessened as they found independent and regular patterns of study difficult. Although this outcome is in disagreement with the aforementioned positive influence of flipped approach, applying this innovative strategy is in its infancy, hence, more and more researches should be carried out to prove its effectiveness. In this regard, this study combines FC with gamification to explore whether this integration is efficacious or not.

6. Conclusion and Implications

The current study was an attempt to scrutinize the effectiveness of integrating gamification with flipped approach on EFL learners' receptive vocabulary learning. To put it concisely, the results of the current research demonstrated that the participants' receptive vocabulary learning significantly enhanced as the result of both flipped approach and its incorporation with gamification. Expressly, implementing flipped approach, independently can contribute EFL learners to be motivated, autonomous, and interactive. This model also enables them to solve

problems, learn at their preferable speed at anytime and anywhere, and promote their competence of receptive vocabulary. However, the incorporation of gamification, as a complementary methodology, with flipped approach can influence all the aforementioned merits at an optimum level. Besides, the combination of gamification with flipped approach can encourage the learners to have an active role during the class time, and also increase their enthusiasm and motivation. In summation, although the independent employment of flipped approach can enhance EFL learners' vocabulary learning, amalgamation of gamification with this model can positively affect vocabulary development in the process of teaching and learning L2. As the conclusion of the study, it was confirmed that flipped approach, as an innovative methodology, boosts learners' receptive vocabulary competence, especially when it is integrated with another dynamic approach such as gamification.

The results of this study can be useful for EFL instructors and teachers for giving them insights on how to employ flipped approach for teaching receptive vocabulary. Furthermore, they will be informed about how to integrate flipped approach with gamification in their own classes. The deployment of mobile games in flipped classes will assist the teachers to keep the issues such as limited amount of class time and lack of interest at a minimum level. In addition, the students will be afforded an opportunity to learn by themselves, enjoy learning, and practice more. Instructors, teaching in junior high schools, high schools, academies, universities and also private institutions, can benefit this innovative combined strategy. Not only instructors, but also EFL learners, seeking out new ways of learning, can use *Vocabulary Builder by Magoosh* game application to develop their vocabulary size. The findings can be beneficiary for these digital natives to search for other game-based applications and use their mobile phones beyond the purpose of pure entertainment, but learning receptive vocabulary entertainingly. The obtained results can also be useful for syllabus and curriculum designers to stimulate innovation in designing the textbooks. At the end, the results of the research can be advantageous to policy makers and managers to employ the procedure of the research in the process of teaching and learning L2.

The findings of this research entailed some recommendations for other researchers to conduct more studies. Addressing the limitations of the study, subsequent suggestions can be made: Since this research focused on female participants, a similar study can be carried out by including both genders in order to compare their performance in gamified-flipped classes and non-gamified-flipped ones. Additionally, the experimentation period of another parallel research can be lengthened to more than eight weeks, as well as applying a delayed posttest within two or three weeks after the last session to obtain more detailed results. Evolved from the delimitations of this research, it is suggested to administer a similar study focusing on learners with English language proficiency of elementary, advanced, or the inclusion of different levels. Choosing other dependent variables, such as listening, reading, speaking, writing, grammar, pronunciation and so on with appropriate game applications can also be fascinating. Finally, redesigning the research by applying mixed-method design in order to include qualitative data as well as quantitative will be a great idea for conducting further studies.

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