



## Research Article

# Improving Reading Knowledge of Iranian Beginner EFL Students: A Comparison Between Gamification and Pen-and-Paper Training

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### Abstract

Innovation in educational media is crucial. The study investigates the best game elements for improving EFL students' reading comprehension, the best educational stages to use gamification strategies, and how gamification affects student engagement and motivation in 8–11-year-olds. Gamified applications and pen-and-paper assignments are compared using standardized reading evaluations. The sample of 70 normally developing children is evenly divided into two groups for 12 hours of school instruction. All groups improved their reading speed and accuracy, with the experimental gamified training group showing a slightly larger impact, although this difference was not statistically significant. Gamification's effects on control and experimental groups were examined using mixed techniques. The pre-test, post-test, pre-survey, and post-survey quantitative results showed that gamification improved reading comprehension and engagement in the experimental group compared to the control group that used traditional study methods. Gamification was also liked by experimental group members for its capacity to improve reading engagement and learning environment. Gamification is proposed as a creative way to shift a reading lesson from teacher-centered to student-centered. This research gives educators evidence-based tips for designing and implementing gamified reading comprehension exercises that improve learning. Gamification helps EFL teachers create engaging and fun learning environments that boost reading comprehension and active student involvement. Gamification is a new English teaching method. These findings emphasize the need of complete training and encourage more research on how gamified technology affect real-world skills and motivators. Gamification's pros and cons must be understood to be effectively integrated into educational programs.

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**Keywords:** EFL Students; Gamification; Pen-and Paper Training; Reading knowledge

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## 1. Introduction

One of the most important macro skills for learning English is reading (Januarty & Nima, 2018). This is a very important part of the process of making sense of things. We understand and get meaning from different kinds of writing by reading them (Snow, 2002). A lot of work has

gone into making fluent readers so that they can get better at English. One interesting way to get people to read more is to use gamification. According to this study, playing games in English class might help students understand what they read and get more involved. A lot of research has shown that reading helps students get better at both English and understanding what they read (Muhid et al.,

2020). Reading helps people learn English because they can use complicated words and grammar correctly (Floris & Divina, 2015; Hunt & Beglar, 2005; Muhid et al., 2020). Also, students show that they understand things better when they read. Understanding is a big and hard job (Elleman & Oslund, 2019), but once students have it, it helps them learn in all subjects (Nuttall, 1996). To sum up, reading is very important for doing well in school and understanding what you read. But a big reason people don't get better at reading is that they believe reading English is the hardest thing to do. To understand what you're reading, you have to read actively. According to Wigfield and Guthrie (2000), reading engagement means that a reader is purposefully and actively involved with the text. Wigfield et al. (2008) say that students are more likely to read when the environment that supports reading makes them want to read. Some studies have looked at how interested students are in reading at school (Guthrie & Klauda, 2014; Ho & Lau, 2018; Jones & Brown, 2011). Everyone who took part agreed that having reading engagement in reading classes was a good thing. But those studies didn't use any special ways to teach; they just used reading materials to see how interested people were in reading. Fullan and Gallagher (2020) said that schools should change how they teach because of new technologies that came out during the COVID-19 pandemic. They said that we should use technology and the ideas behind a student-centered approach to make "education for all" a reality. You can use gamification with the technology that is already in the classroom to help students learn better. It uses different game elements, such as challenges and rewards, to help students reach their learning goals (Sailer & Homner, 2019). Sailer and Homner's students came up with smart ways to answer questions correctly so they could get their prizes. They also said that the competitive and collaborative parts of gamified learning made them feel like they were part of a community. This helped them do better, stay interested in the material, and stay motivated. Gamification might help students understand what they read and get more interested in English classes (Dehghanzadeh et al., 2021). The parts of gamification help students learn better, so they should also be used in English classes. Quiz tools have been shown to help high school seniors understand what they read better because their interfaces, features, and gamified elements are more dynamic and interesting than those of traditional media (Ratnasari et al., 2019). Also, gamification has been used to help students learn new words (Panmei & Waluyo, 2023; Yu, 2023), which is very important because you need to know a lot of words to understand what you read. People believe that making college students more interested in reading will help them understand what they read better. There aren't many real studies that look at how gamification in the classroom affects reading comprehension and engagement,

especially in college-level EFL settings. The goal of this study is to help Iranian EFL university students understand what they read better and get more involved by turning a reading course into a game with quizzes and Kahoot.

Thus, it prompts the following research questions:

1. To what extent does gamification help beginner EFL student's beginner improve their reading engagement?
2. To what extent does gamification help Iranian EFL student's beginner improve their reading comprehension?
3. What are their perceptions of using gamification to enhance reading engagement and comprehension in their reading class?
4. What do Iranian ELT teachers perceive to be the pros and cons of using gamification in reading comprehension for teaching Iranian students?

## 2. Literature Review

### 2.1. Reading Engagement

Nick Pelling, an English programmer, was the first person to use the word "gamification" in 2011. Deterding et al. (2011) say that using technology to add game design aspects to regular classes makes students more interested in learning and makes the process more fun (Huotari & Hamari, 2012; Zicherman & Cunningham, 2011).

Digital learning tools need to have certain features in order to help people learn new skills. These things help people stay focused on their goals, stay interested in their job, and apply what they've learned in real life (Pasqualotto, Parong, Green, & Bavelier, 2023). Using closed-loop algorithms (Mishra, Anguera, & Gazzaley, 2016) is a good way to make sure that training difficulty can change. As a pupil gets better, adaptivity slowly raises the bar. The tasks that trainees are assigned should get harder as they get better at them. Vygotsky (1981) says that this maintains people at the brink of what they can do. Giving feedback is just as crucial at every stage of learning (Sailer et al., 2017). There is a lot of evidence that the way players act in games can change how much they want to keep playing. Motivation is a big part in getting some results (Malone, 1981). The Self-Determination Theory (SDT) (Deci & Ryan, 1985, 2000; Rigby & Ryan, 2011; Ryan & Deci, 2000) is a well-known way to understand motivation in this setting. Self-determination theory stresses how important it is to address core psychological demands like independence, competence, and social connection. The desire for independence comes with the requirement for self-control and accountability. Competence includes being able to finish activities quickly and demonstrating that certain goals have been attained. In the end, the demand for relatedness means things like being accepted, connected, and part of a group.

Gamification has been connected to good results in addressing people's needs for motivation and encouraging certain actions. The results depend on the user's personality, the activities they want to take, and what they see happening (Dalmina et al., 2019; Peng et al., 2012; Xi & Hamari, 2019; van Roy & Zaman, 2019).

## 1.2. Gamification and game design

The concept of gamification has recently evolved to focus on the experiential quality of playing and gameful experiences, rather than specific elements of game design (Gooch et al., 2016; Hamari, 2019; Seaborn & Fels, 2015; Xi & Hamari, 2019), such as scores, prizes, leaderboards, levels, progress bars, challenges, ratings, etc., which can affect specific motivational mechanisms (Spanellis et al., 2016; Vassileva, 2012). In a recent study by Xi and Hamari (2019), the authors examined the relationship between user interactions and various elements of gamification. They identified three main categories of gamified features aimed at increasing player motivation. The immersion-related outlines (i.e. avatar, storytelling, customization, etc.) aim to engage users in self-directed activities and promote autonomous thinking (Koivisto & Hamari, 2019; Peng et al., 2012; Stefanou, Perencevich, DiCintio, & Turner, 2010); the achievement-related features (i.e. points, badges, feedback, leaderboards, tasks, etc.) measure player behavior and encourage goal-oriented behaviors (Hamari, 2017; Hamari et al., 2018; Rigby & Ryan, 2011; Sailer et al., 2014); the social-related characteristics (i.e. groups, messages, social network, etc.) create a sense of relatedness and strengthen interpersonal relationships (Shiau et al., 2018). Xi and Hamari (2019) found that immersion-related features were associated with autonomy satisfaction, while achievement and social-related features were associated with all three psychological needs.

These findings suggest that game design should incorporate different gamified features to effectively motivate users. Specifically, in a study (Sailer et al., 2017), the impact of different game design elements on the satisfaction of basic psychological needs was examined. The results revealed that badges, rankings, and performance charts positively influenced the need for competence by providing feedback and increasing task significance (Peng et al., 2012; Rigby & Ryan, 2011). On the other hand, avatars, storytelling, and teammates influenced social experiences by fostering shared goals (Rigby & Ryan, 2011). However, perceived autonomy was not affected by any specific game design aspect, suggesting that it may depend on other decision-making processes (Peng et al., 2012). The authors emphasized the importance of players' awareness of these game design elements to achieve the desired results. Gamified features can serve as both extrinsic and intrinsic motivators,

depending on the context and individual preferences (Deterding, 2011). The literature indicates that the positive effects of gamification can be achieved through a comprehensive design process. While it is important to analyze the effects of different gamification elements, it is crucial to consider that these elements may have multiple motivational effects based on their situational meaning. However, the literature also reports negative or null results of using gamification to improve learning (Hyrynsalmi et al., 2017; Toda et al., 2017). These negative influences are related to limiting challenges resulting from poorly implemented gamified features, which hinder users from realizing their full potential. Additionally, there are harmful concerns, such as adverse effects on user behavior, including addiction-like behaviors related to gambling and excessive gaming (Hyrynsalmi et al., 2017). The first category concerns problems resulting from poorly implemented gamified features, restricting users from realizing their full potential. While the second one involves serious and ethical problems, such as gambling and game addictions.

## 1.3. Gamification in the educational context

Gamification has emerged as an innovative and effective strategy for enhancing student motivation and engagement, particularly in the context of literacy improvement (Deterding et al., 2011). By integrating game elements into educational programs, gamification offers students a dynamic and immersive learning experience (Hamari et al., 2014; Sailer et al., 2017; Xi & Hamari, 2019). The use of gamification was analyzed from primary to university grades (Hailey et al., 2016). In particular, this methodology has a positive and effective influence on involvement, motivation, learning results, satisfaction, and fun, both in children with typical development (Landers, 2014; Lee et al., 2013; Lister, 2015; Pasqualotto, Altarelli, et al., 2022) and with learning difficulties (Cuschieri et al., 2014; Dymora & Niemiec, 2019). Studies focus on the impact of learning technology usage on a particular type of learner, specifically, primary school students, and the most popular outcomes regarding an improvement in mathematics, science, language, and social skills (Chauhan, 2017; Hailey et al., 2016). Some studies have concentrated on the influence of learning technology usage on a single aspect of learning, such as reading (Cheung & Slavin, 2012; Pasqualotto, Altarelli, et al., 2022), another, and another, and mathematical skills (Li & Ma, 2010). Some recent reviews highlight the positive effect of using gamification strategies in the educational context. A work analyzes 54 empirical studies that demonstrated the potential to enhance learning outcomes (Dehghanzadeh, Farrokhnia, Dehghanzadeh, Taghipour, & Noroozi, 2023). Another research describes the

modalities in which gamified tools are implemented to increase efficacy in the educational context and to achieve various educational purposes, from mathematical and reading skills (Zeybek & Saygi, 2023). Giving more detail, Cheung and Slavin (2012) highlight studies that demonstrated an improvement in reading skills in comparison to traditional methods. This modality is used in the school environment, in a telematic or a hybrid manner to acquire new knowledge (Vrcelj et al., 2023; Nieto-Escamez & Roldán Tapia, 2021).

### 3. Methodology

#### 3.1. Research Design

This study utilized a mixed-methods research design. Mixed-methods research entails the collection and analysis of both quantitative and qualitative data to yield a more comprehensive response to research inquiries (Creswell & Creswell, 2017). This study quantitatively collected data to examine the enhancement of reading engagement through pre- and post-surveys and reading comprehension via a reading pre-test and post-test following the implementation of gamification. The quantitative data were gathered and subsequently utilized to enhance the qualitative findings derived from a focus group interview, aiming to obtain a more comprehensive understanding of gamification's impact on students' reading.

#### 3.2. Participants

The population of this study was drawn from 6<sup>o</sup> language learners in English, at the beginner level, who enrolled in a reading course at the Foreign Languages Institute. Their English proficiency scored lower than intermediate to upper intermediate, based on an OPT proficiency test (Waluyo, 2019). The study involved 70 students (14 males and 56 females), selected using the random sampling method (Creswell & Creswell, 2017). The researcher put them randomly into two sections by drawing their numbers. The two sections then became the experimental and control groups, respectively. There were close to 20 participants in both groups, 6 males and 29 females in the experimental section, who learned with gamification, and 8 males and 28 females in the control group, who learned traditionally. A placement test was administered to 70 students, and based on the results, 40 students with comparable proficiency levels were selected. These participants were then randomly assigned to two groups, each consisting of 20 students. Both higher- and lower-performing students were present in each group to ensure a balanced distribution. In this selection process, gender and age were not considered relevant variables; only the students' language proficiency was taken into account.

#### 3.3. Research Instruments

**Oxford Placement Test:** The Oxford Placement Test, or OPT, is a well-known standardized test that measures how effectively students can speak and write English at different levels. The test checks many language skills, like grammar, vocabulary, reading comprehension, and listening. The OPT is a good way to find out what a student is good at since it has a flexible format.

**Pre-test :**It consists of 20 multiple-choice questions focusing on vocabulary, grammar, and reading comprehension.

**Post Test :**It consists of 20 multiple-choice questions focusing on vocabulary, grammar, and reading comprehension

**Game:** In this interactive group game, students work with scrambled sentences from a reading passage. Their goal is to reconstruct the text correctly using dice rolls and special power cards. The game promotes reading comprehension, sentence logic, teamwork, and quick thinking in a fun and competitive way.

#### 3.4. Procedure

The interviews were done over the phone, in writing, by voice mail, and online. Teachers have two or three days to answer the questions. The students were given the questionnaire and told to fill it out. Seventy students took a placement test (OPD), and forty of those who scored the same or better were picked. It was only the pupils' degree of language skill that mattered; things like age and gender weren't important. After that, the selected students were divided into two groups of twenty. The first group learned in a traditional way, while the second group learned in a more modern way. Before the lesson started, they took a pre-test to see how well they could read. This test has twenty multiple-choice questions about grammar, vocabulary, and reading comprehension. Most students scored between 8 and 11, but some got as high as 13. Both groups had students with scores ranging from eight to eleven. After that, each group had three one-hour reading sessions a week for two weeks of lessons. The lesson was followed by an exam. The kids in the traditional group had a challenging time answering higher-order, conceptual problems. Their results on the test ranged from 13 to 16. Students who had current teaching, on the other hand, were able to answer most of the questions correctly. The group that was taught in the usual way was mostly able to provide translations, synonyms, and antonyms, but they couldn't understand concepts. The group that learned using modern methods, on the other hand, had a greater

understanding of the reading passages and was better able to answer questions based on concepts.

## 4. Results

### 4.1. Addressing the First Research Question

The first research question was as follows:

What are teachers' perceptions of using gamification to enhance reading engagement and comprehension in their reading class?

The first research question was formulated to gain information about the teachers' challenges while teaching reading comprehension to Iranian EFL students at beginner levels in language classrooms. To answer this question, qualitative data from interviews were used. As explained earlier, of the 30 teachers who completed the survey, 21 teachers completed the interview questions thoroughly. The questions and the teachers' answers in the form of excerpts were as follows. The first question of the interview was similar to the first research question. In terms of the first question of the interview, all the interviewed teachers believed that they always face different challenges while teaching reading comprehension to Iranian EFL students who are beginners. Furthermore, they listed some solutions for overcoming the problem. One EFL teacher who had 4 years of experience in teaching mentioned challenges like:

*Lack of time, lack of resources or sufficient training to perform their duties in the best way, dealing with people with different learning abilities, the problem of misalignment, isolation and shyness of some students, students' disorder –feeling of fear and the anxiety of some students and the problems of divorce in some families with EFL student's beginner.*

As a teacher, I believe that one of the main challenges in developing students' reading comprehension is the traditional way of teaching the alphabet and reading skills. In many textbooks, reading is presented through memorization of letters and isolated words without meaningful context. Students often learn to recognize and pronounce words, but they do not fully understand their meanings. This lack of comprehension affects their ability to make connections, infer meaning, and understand the overall message of a text.

Additionally, limited resources, insufficient time, and the lack of suitable reading materials make it more difficult to design activities that promote deeper understanding. To improve reading comprehension, I believe it's essential to employ more engaging and context-based methods, such as storytelling, picture reading, and guided questions, which help students connect new vocabulary to real-life situations. Moreover, a teacher with 7 years of teaching experience and an M.A. in TEFL stated that:

I have observed that a lack of time and insufficient mastery of the English alphabet often create confusion for both teachers and students. This directly affects students' reading comprehension. When learners struggle with letters and vocabulary, they cannot fully understand texts, infer meaning, or connect ideas. In my experience, improving familiarity with letters and words in meaningful contexts is essential for developing strong reading comprehension skills, especially for beginner EFL students.

The other teacher stated that:

Students often do not know the letters, cannot pronounce them correctly, and struggle with writing. Time is very limited, and they even have difficulty writing words according to Persian pronunciation. These challenges, along with long or complex words, are among the most significant problems teachers face when teaching beginner EFL students. Furthermore, some words have difficult pronunciations, which becomes even more challenging for children who stutter. All of these difficulties can hinder students' reading comprehension, as they cannot recognize words fluently or connect them to their meanings in context. The second question of the interview with teachers was as follows:

#### How do they overcome them?

The interviewed teachers listed the following strategies to overcome the problem of teaching to EFL students:

*Practice, repetition, and instructional videos;  
Using various educational methods such as dot-coloring the empty letters;*

*Using the least opportunity and borrowing from other courses, such as math or computer, for teaching new words;*

*Using a variety of methods in accordance with the students' abilities;*

*Using pictures and the different teaching tools;*

*Motivating the learners and using a variety of teaching methods, such as designing an application;*

*Making PowerPoint;*

*Increasing the time of language classes;*

*Continuous exercise;*

The following are two extracts of the teachers' solutions to the problem: *To overcome these challenges, we must foster a close relationship with the parents of our students, and some problems can be addressed by the relevant authorities. In situations such as art classes or sports time, I use conversations to repeat the new words while they are playing.*

#### The third question of the interview was a query about the approach and methods of teaching that the teachers use to teach EFL students' beginner.

One of the answers obtained for the third question of the interview contained different approaches as follows:

Using the textbook of each grade and the desired workbook, using the English notebook to write letters and words, using the computer keyboard and Word Office program, and printing and replacing in the class panel, using happy and melodic CDs and game CDs aiming to learn letters and words and their meanings, using the school smart board to consolidate learning.

Using cards and educational pictures, using number cards, question and answer storytelling sessions, active use of teaching method: one which is both student-centered and teacher-centered, active use of educational CDs, use of alphabet cards, movies, educational clips, video presentation, repetition and rehearsal, use of objects and numbers, summarization and repetition, collectively repeating the question, and role play were the approaches that teachers preferred to use for teaching exceptional students. Almost all of the teachers mentioned using songs and photos to teach language in general and vocabulary in particular for instructing exceptional students. In sum, the following quote was selected from among the answers:

*The best way for students to be active is using game. It is also used in life, which makes them eager to learn. Also, the teaching time should be short so that the student does not get bored.*

Teachers' points of view on the fourth question of the interview, which focused on the existence of any common activities between the unit for exceptional students and the ordinary school classes, were different. For instance, of the 21 teachers, just two of them gave a negative answer to the question, whereas the rest (more than 90%) gave a positive answer to the question. The following are some of the quotes from the teachers.

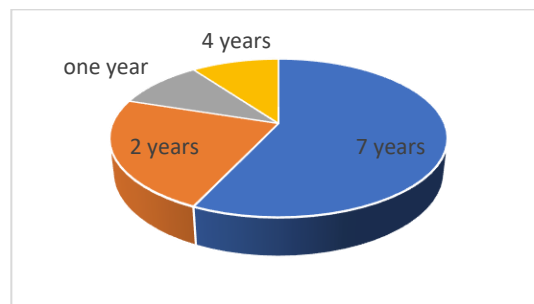
*Yes, the activities that ordinary students do quickly, our exceptional students are able to do with a longer time and a slower process.*

*Yes, number teaching is not designed for exceptional students, and we are working on the numbers as we work with normal students. The difference is only in practice and repetition.*

*Language learning is the same for everyone; the difference is in the speed of learning. Common writing activities also include the use of CDs to complete homework, but all ordinary students are sensitive to monotonous education, and they get bored. Furthermore, both must memorize the pronunciation and try to translate words.*

#### **How long have you been teaching students with exceptionalities in the special education classroom?**

From 21 teachers, 12 (57%) of them mentioned to 7 years of teaching, 5 (23%) of them pointed to 2 years of teaching experience, 2 (9.5%) of them to 4 years of experience, and 2 (9.5%) of them to one year of experience students with exceptionalities in the special education classroom. Figure 4.1 represents the results.



**Figure 1.** Years of teaching with students

Question number 6 tried to investigate the teachers' descriptions of the communicative abilities of students with exceptionalities in their English classroom. The teachers' answers were different; for instance, one of the teachers reacted to this question as follows:

*Because our student plays an active role in the language class, this in turn enables them to communicate with other students and the teacher.*

In addition, one of the enthusiastic teachers asserted, "Students' abilities in the classroom are very different, but in general, with the proper management of the classroom, normal students' abilities can be used for better learning of students with a slow rate of learning".

Some of the quotes were as follows:

*EFL beginner students have a hard time learning English, and they learn only to the extent that they can use frequently used short words and recognize letters.*

*Students have difficulty speaking English, and it is difficult for them to communicate more due to the lack of time.*

*Students have unique abilities that are tangible if the ground can be created.*

*Students are very interested in conversation, and this trick can be used for positive communication and effective learning.*

*EFL students' beginner each has unique characteristics, and these characteristics must be considered. Students with higher communication skills are more interested in English learning.*

The other question was as follows:

#### **Which types of technology or game instruction do you use in your English classroom for teaching vocabulary?**

Based on the results, use of the language learning CDs available on the market while playing and reading aloud (taking into account their abilities), typing letters using the classroom computer keyboard, playing with cards and letters and using the related movie and CD and doing exercises and games of that CD, using poem, use of puzzles in the form of English letters, use of picture card and the letters of the wooden alphabet and drawing the letters, use of computer games, English educational videos, use of various educational clips and CDs available in the school, using the template and display the

corresponding images, storytelling and creating excitement along with rhythm, all and all were the types of technology or game instruction, which teachers use in their English classroom for teaching vocabulary for EFL students beginner. Please provide one or more examples you consider effective use of game technology for teaching reading comprehension at your school. The following are some extracts obtained from teachers in response to the question: Educational use of the school's smart board and computers for interactive reading activities, such as matching sentences with appropriate images, analyzing short texts collaboratively, or solving comprehension puzzles. Students read a short paragraph or story and then answer questions, make connections between ideas, and discuss the content in pairs or groups.

#### 4.2. Addressing the Second Research Question To what extent does gamification help Iranian EFL students improve their reading comprehension?

The second research question aimed to investigate whether there is a significant difference in reading comprehension achievement between Iranian EFL learning students who improve their reading skills through game-based applications and those who learn through conventional classroom methods. To examine this, a pretest and posttest on reading comprehension were administered to students in both groups. Table 1 presents the results of the pretest for the groups under study. Table 1 shows that the mean score of the students in the

treatment group is 11.1 with a standard deviation (SD) of 5.4. In the control group, the mean score is 10.9 with an SD of 2.6. As seen in the table, the mean scores of the two groups are only slightly different. However, to determine whether these differences are statistically significant, a proper statistical test is required. One of the assumptions for parametric testing is that the data should follow a normal distribution. Table 4.2 presents the results of the normality test for the pretest on reading comprehension between the two groups. The significance value (Sig) for the control group with  $df = 30$  is 0.229, and for the experimental group with  $df = 30$  it is 0.475. Since both significance levels are greater than 0.05, the data can be considered normally distributed. However, normality alone is not sufficient to draw a final conclusion regarding the homogeneity of the groups before the intervention. Therefore, an independent samples t-test was conducted to examine whether there was a significant difference between the two groups in the pretest of reading comprehension. The results of the t-test for homogeneity at pretest are presented in Table 3. According to the table above, Levene's test for equality of variances shows  $F = 22.44$  with a significance level of .740. Since the significance level is higher than 0.05, the assumption of equal variances is met. Additionally, as the p-values for the pretest on reading comprehension in both groups exceed 0.05, it can be concluded that the data are normally distributed. Figure 3 presents a bar graph illustrating the mean scores of students in the experimental and control groups on the pretest of reading comprehension.

Table 1. Descriptive Statistics of Pretest

Group Statistics				
Groups	N	Mean	Std. Deviation	Std. Error Mean
Experimental	30	11.1000	5.46683	0.99810
Control	30	10.9333	2.61209	0.47690

Table 2. Kolmogorov-Smirnov Tests of Normality in Pretest

	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pretest Control	0.138	30	0.200	0.939	30	0.229
Pretest Experimental	0.128	30	0.200	0.962	30	0.475

Table 3. Independent Samples Test of Pretest

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	22.444	0.740	0.151	58	0.881	0.16667	1.10618	-2.04760	2.3809
Equal variances not assumed			0.151	41.585	0.881	0.16667	1.10618	-2.06636	2.3996

**Table 4.** Descriptive Statistics of Posttest

Group Statistics				
Groups	N	Mean	Std. Deviation	Std. Error Mean
Experimental group	30	18.8667	1.33218	0.24322
Control group	30	14.7000	1.93248	0.35282

**Table 5.** Tests of Normality of Posttest

	Kolmogorov-Smirnov <sup>a</sup>		Shapiro-Wilk			
	Statistic	df	Sig.	Statistic	df	Sig.
Posttest Control	0.128	30	0.200*	0.962	30	0.575
Posttest Experimental	0.128	30	0.200*	0.962	30	0.489

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

a. Lilliefors Significance Correction

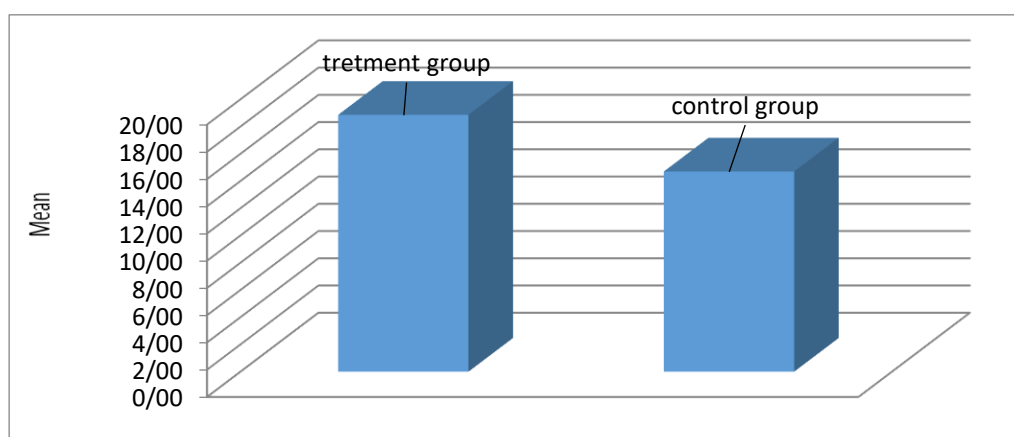
**Figure 2.** Groups' Performance in reading

Table 4 reveals that the mean scores of the exception students in the treatment group or game-based app group are 18.8 with an SD of 1.33. In addition, the mean of the control group with the SD of 1.93 is 14.7. Similar to the procedure conducted for the pretest, there is a need to run a homogeneity test for the posttest of vocabulary. Table 5 shows the test of normality of the posttest in vocabulary between the groups. As a result, the null hypothesis, which stated that there is no significant difference in reading comprehension achievement between Iranian EFL learning students who improved their comprehension through game-based applications and those who learned through conventional methods, is rejected. This indicates a significant difference between the two groups in reading comprehension performance. Therefore, it can be concluded that students who received game-based reading instruction outperformed those who received traditional instruction. Figure 4.4 presents a visual representation of these results.

#### 4.3. What do Iranian ELT teachers perceive to be the pros and cons of using gamification in reading comprehension for teaching Iranian students?

To address this question, quantitative data from a researcher-made questionnaire were used, which

measured teachers' perceptions regarding the advantages and challenges of using games in teaching reading comprehension to Iranian EFL learning students. A descriptive analysis was conducted to determine the mean scores for each item answered by the teachers. Additionally, the total mean scores of responses to the 12 Likert-scale items were calculated to explore teachers' overall perceptions of the different aspects of the scale under study. As mentioned earlier, the participants consisted of 21 EFL teachers who teach reading comprehension to EFL learning students and completed the questionnaire. It is noteworthy that the questionnaire was designed based on Hubbard's (2011) scale, which was fully applied to examine the implementation of the game-based reading comprehension activities.

The 21 surveyed teachers reported varying degrees of agreement with the items on the questionnaire. The means of individual items ranged from a high of 4.33 to a low of 2. The highest agreement was observed for items 11 ( $M = 4.33$ ) and 3 ( $M = 4.09$ ), which addressed statements such as "Students would have used the reading game and/or comprehension app more if they had access on their devices" and "The points achieved in the reading games motivated students to practice comprehension skills." Conversely, teachers had mixed attitudes toward item 7 ( $M = 2$ ), "The game did not add value to English classes,"

with more than half disagreeing and considering the statement inaccurate.

The first item focused on students' overall learning of new content during the English course. Most teachers (61.9%) believed that students learned many new comprehension strategies and reading skills during the course, while only four teachers (19.1%) disagreed with the positive effect of the game. Regarding item 2, about half of the teachers (47.6%) disagreed with the statement "The game did not affect students' motivation to improve reading skills," whereas 38% agreed. In item 3, over 95% of teachers reported that the points and rewards in the reading game motivated students to engage with texts and practice comprehension strategies. For item 4, most teachers (76%) agreed that students enjoyed testing new reading games, with nearly 10% strongly agreeing. Item 5, "Students would have learned the same skills without the game," received neutral responses, with roughly 40% agreeing and 40% disagreeing, reflecting mixed perceptions. Item 6 addressed the usefulness of the app in supporting reading comprehension practice and preparing for text-based exercises. More than 70% of teachers agreed on its effectiveness. As mentioned earlier, item 7 received disagreement from most teachers, confirming that the game added value to English classes. For item 8, half of the teachers disagreed that the game was easy to use despite being in English only, and 33% were uncertain. Regarding item 9, which focused on the comprehensibility of instructions and tasks within the game, nine teachers disagreed about difficulty, five agreed, and the remainder were neutral. Item 10 concerned students' preference for traditional books over games. Surprisingly, more than 70% disagreed, indicating that the game's effectiveness in promoting reading comprehension was not supported. Item 11, "Students would have used the reading game more if it were available on their devices," was strongly agreed upon by over 90% of teachers. Finally, item 12 addressed students' eagerness to use monolingual dictionaries or dictionary games, with more than 70% of teachers disagreeing, indicating a preference for the game reading activities. Overall, the total mean score of the 12 items was 2.9, reflecting teachers' positive attitudes toward the use of the reading comprehension game. Additionally, open-ended questions were included to explore teachers' perceptions in greater depth. The first open-ended question asked:

**"Please provide comments on the reading comprehension games and compare them to other digital reading or comprehension tools you use, such as Duolingo, WordDive, or Quizlet."**

The teachers had positive attitudes toward the application as follows:

*This application is better used for educational assistance along with text books and direct teaching.*

*In general, because children prefer to use a mobile phone to a book, I think this program is more efficient than a book, but the pressure of the teacher to provide exercises and questions is higher when using books.*

*The program is very interesting.*

*Learning was better if it was used to teach words in sentences.*

*This program is suitable for basic learning of letters and words.*

*If this program continues, it will be very effective in teaching the language to exceptional students.*

*The game was complete and comprehensive, in my opinion, such games are interesting and motivating for children.*

*This application can increase the motivation of students to learn vocabulary and stabilize the content with more understanding and comprehension, because the issue of scoring motivates students on its own.*

The disadvantage of this application is that the use of some content in English is not at the level of students and parents, and this causes discouragement, but compared to other language learning programs, it has a higher quality of learning.

*It is very fun and motivating, and students enjoy learning the language.*

*It was good and convenient.*

*Most students do not have the facilities to install this program or the ability to use this program alone.*

*It is suitable for students' initial training.*

The next open-ended question was as follows:

**If you could plan your own vocabulary learning game, what would it be like?**

*In the form of a clip with simultaneous sound and image, expressing the state and meaning of the word in a completely tactile way.*

*In the same way, the existing application is excellent.*

*Complete puzzles with pictures and photos.*

*In a way that is understandable to most children.*

*Complete puzzles with pictures and photos.*

*I tried to make more varied openings, such as puzzles, in addition to sound, written form of letters, meaning of words, etc., and with newer and more natural words other than books.*

*It would be great if it had pages to write letters and words correctly.*

*It was better to design the vocabulary learning game by using a flashcard vocabulary with scoring and awarding prizes.*

*Cartoons, films, short videos, puzzles, and animal photos.*

*I have not thought about this yet.*

*I designed according to the characteristics of the children.*

*Play with short poems to learn more*

#### 4.4. Addressing the Fourth Research Question

The last research question aimed to investigate the attitudes of EFL teachers towards games via an open-ended questionnaire to evaluate the game for reading comprehension learning.

#### **RQ4: What do teachers perceive to be the pros and cons of using the sentence builder game for Iranian EFL students?**

The questions and the answers of 30 teachers that their children experienced working with the game listed below:

#### **Please list three things you like and three things you dislike about the sentence builder game.**

*Positive aspects:* Clear expression of words by spelling the part where a wrong word is selected, the feedback is obvious, attractive coloring, the audio of the game is very good, the pictures are interesting and attractive, high motivation, attractive learning environment, the program is fun and motivates the kids, convenient and full of content in accordance with the curriculum objectives, good training words, EFL students also become familiar with letters, and the ability to repeat words.

*Negative aspects:* Pronunciations were not clear, it entertains children on the phone, but it prevents them from doing other important things, monotony, it is not basically isolated for children, lack of meaning of words, lack of educational words, sound was not clear, and it is not designed and leveled for children on a basic level.

#### **What aspects of reading comprehension of your child do you think have improved by using the game?**

*Writing letters, correct pronunciation, learning the letters, recognition of letters, learning the names and shapes of letters, spelling words, and learning the English alphabet were the answers that all of the parents reported their children have improved in by using the game.*

#### **Do you have any suggestions for further development of this game?**

From the total 30 teachers, 2 of them had no suggestion, but the rest had different point of views. The following are some extracts obtained from the data gathering procedure.

*The result of the test is determined by pressing the key.*

*The initial and final test results can be determined by pronouncing the correct answer.*

*It was not uniform, and it was difficult to install.*

*It is better to separate this application for the seventh to ninth grades.*

*Use sentences; More Images; Use short films as well; I have no suggestion. The app was great, I used it with no change. Add sentences;*

*I tried to add one part for instructing the names of public places.*

#### 5. Discussion

As already stated, the main objective of the current study was to explore the attitudes of ELT teachers and parents of EFL students on the newly used game on their reading comprehension. The first research question 1. To what extent does gamification help beginner EFL students improve their reading engagement?

Tried to explore to investigate the effectiveness if gamification to help EFL student . To answer this question, qualitative data from interviews were used. As explained earlier, of the 30 teachers who completed the survey, 21 teachers completed the questions of the interview thoroughly. The questions and the teachers' answers in the form of excerpts were reported. Based on the results, all of the interviewed teachers believed that they always face different challenges while teaching reading comprehension to the EFL. Lack of time, lack of resources or sufficient training to perform their duties in the best way - dealing with people with different learning abilities - the problem of misalignment - isolation and shyness of some students - students' disorder -feeling of fear and the anxiety of some students and the problems of divorce in some families with EFL students were of the prime challenges most of the teachers faced with them during the process of teaching with disable students. Furthermore, they listed some solutions for overcoming the problem, such as practice, repetition, instructional videos, and using various educational methods, such as dot-coloring the empty letters. It is worth noting that no study so far has been conducted like the present study in examining the attitudes of ELT teachers and of EFL students toward the effectiveness of a game in teaching reading comprehension; hence, no comparison and contrast can be done considering the previous studies. As already stated, the main objective of the second research question is 2. To what extent does gamification help Iranian EFL students as beginners improve their reading comprehension? was to explore the role of sentence builder, a game for reading comprehension learning, on the reading comprehension of beginner EFL English students. The focus was on how technology is being used to support students.

The results showed evidence of the effectiveness of the game on improving EFL children who were learning English as a foreign language. Using game reading comprehension for learning is very popular nowadays because it is portable and has high mobility. With growing interest in the game, these programs are now being used for education. Based on the results of the current study, the game can be used for motivating EFL students, beginners to learn reading comprehension and facilitate learning English both inside and outside the school. Based on the research question, the null hypothesis claimed that there is no significant difference in vocabulary

achievement between EFL students at the beginner level who learn vocabulary through games and those who learn vocabulary through the conventional method. In order to test the null hypothesis, an independent samples t-test was used that whose results showed that the t-test value of 9.72 to manifest the equality of means with a significant level of .000. As for the equal variances, the results show that the significant level of 0.003 is less than 0.05, hence the null hypothesis was rejected. The results of the current study are in harmony with Gass and Selinker (as cited in Turgut & Irgin, 2009) that maintained the natural repetition in games allows a language learner to be continuously exposed to the target language, creating more opportunities for acquisition to occur. Furthermore, the results are in congruence with DeHaan, Reed and Kuwada's study (2010) that tried to explore the effects of music video games on second language vocabulary recall of Japanese EFL learners. Their justification for the effectiveness of games on language learning was the interactive nature of the games or "the extent to which users can participate in modifying the form and control of a mediated environment in real time" (p. 75). They believed that the games incorporate various pedagogical elements to both entertain and train the player, and when a degree of interactivity between players and these elements takes place, learning happens. The results of the current study are in line with Donmus's study (2010), which researched information about using educational games with the support of social networks in foreign language education. The result of his study showed that students who continuously interacted with Facebook benefited from educational games. In addition, the results are in congruence with Sudarmilah et.al. (2020), who tried to make it easier for children to understand and foster reading comprehension as well as to develop children's motivation in the learning process. as this learning media is designed with an attractive and interactive interface. The development method used in designing this application is the prototyping model, which consists of needs analysis, prototype design, prototype evaluation, program writing/coding, program testing, program evaluation, and implementation. Edugame, as a vocabulary learning media for deaf children, promotes an interesting and interactive learning process to improve children's understanding of words in learning vocabulary. The results of the black box testing, pre-test and post-test, paired sample t-test, SUS, and Aiken V revealed that all the results were valid, so it could be concluded that there were significant differences (real) before and after the use of the game in the learning process. Their reasons for the real effectiveness of the game under study were its attractiveness and fun nature (very similar to the claim of the present research). This fantasy is enhanced through audio and graphics, attractive photos of the English alphabet, and so on. Several studies suggest that the game

show elements, graphics, points and audio contribute to a more positive learning environment (Abidin & Zaman, 2017; Lee et al., 2019; Moutinho & Sá, 2018). Several studies mentioned positive effects from the use of graphics, audio and music in games or training applications (Baydas & Cicek, 2019; Bicen & Kocakoyun, 2018). The aim when creating the current game was to create a learning platform that was so engaging, fun, and motivating that it would positively affect the learning outcome, classroom dynamics, and reduce exceptional students' anxiety. The results of this study may suggest that there is a relationship between engagement, motivation, and having fun and learning outcomes and classroom dynamics, especially with ESL students. One justification for the effectiveness of the designed game, the English reading game, was the fact that the game made EFL students more motivated and active in learning reading, as the attitudes of their parents and their teachers approved this fact. The teacher controls the ELF students' beginner learning progress and reviews what they have learned, and this corresponds to the benefits of using technology in English language learning. With this game, English reading, EFL students can choose when and where to learn. The whole process is student-centered learning. The third research question tried to explore Iranian EFL teachers' perceptions about the pros and cons of using games in the vocabulary learning classroom for teaching beginner Iranian EFL students. Based on the findings, EFL teachers believed that even though this game uses some content in English that is not at the level of students, and this causes discouragement, but compared to other language learning programs, it has a higher quality of learning, it is very fun and motivating, and students enjoy learning the language due to its convenient nature. Thirty teachers that their children experienced working with game believed that the game has several positive aspects such as clear expression of words by spelling the part where a wrong word is selected, the feedback is obvious, attractive coloring, the audio of the game is very good, the pictures are interesting and attractive, high motivation, attractive learning environment, the program is fun and motivates the kids, convenient and full of content in accordance with the curriculum objectives, good training words, EFL students beginner also become familiar with letters, and the ability to repeat words. The teachers believed that the negative aspects of the game were the pronunciations that were not clear, it entertains children on the phone, but it prevents them from doing other important things, monotony, it is not basically isolated for children, lack of meaning of words, and lack of educational words. The sound was not clear, and it is not designed and leveled for children on a basic level. In general, 36.7% of the teachers rated the game with a score of 3, and 33.3% rated it to be 4 as the highest score. Moreover, a small number (10%) rated it

with the lowest score of 1. The main conclusion of the present study is that game has a positive effect on learning, but there are challenges and room for improvement. The study shows that several experiments have been conducted on the learning effect of using games for disabled children and individuals, but there is still room for empirical studies, especially on classroom dynamics, student anxiety, and perceptions of beginner EFL students.

## 6. Conclusion

The main aim of the current study was to explore the impact of Sentence Builder, a game, on the reading comprehension of beginner EFL students. The hypothesis under study was a null hypothesis and in order to confirm or reject it, a t-test was run. Based on the results, the null hypothesis was rejected at a P value less than 0.05, and the findings indicated that the role of the sentence builder game was more significant in the reading comprehension of beginner EFL students. In addition, the attitudes of teachers were the other focus of the study, as the results of interviews and a researcher-made questionnaire revealed the applicability and attractiveness of the game. Also, the pros and cons of the game were investigated for further study. Sentence builder, a game, was designed, developed, and tested in this study. The units and topics in the English book curriculum served as the basis for the game units and content. The game preferences served as the basis for the game types utilized within the game. This combined learning tool and game allows EFL students, beginners to either learn or retain words they choose or words the game decides for them. This fun reading game gives EFL students beginner definitions and tiles with combinations of several letters on them that you have to arrange into the new words. Based on the results, it was revealed that this game helped the EFL student beginner learn English words accurately and naturally. This game also assisted the EFL student's beginner to check their learning outcomes and progress using an additional test. This game provided a comprehensive, in-depth word database, multiple words, realistic analysis, and audio pronunciations for unfamiliar words. In fact, games are motivating for EFL learners and as Uberman (1998) pointed out, games are a way to help students not only enjoy and entertain with the language they learn, but also to practice it incidentally. Based on the results, it can be concluded that some techniques are effective in comprehension and production, and the learners should be aware of the nature of different instructional strategies to trigger their own interest in language learning and production. As a final remark, it is sometimes proposed that games are just for fun and have very little effect on teaching and learning. However, this research revealed that games, especially the sentence builder game,

contribute to the reading performance of beginner EFL students if they give students a chance to learn and practice the language. To conclude, learning vocabulary through the sentence builder game was observed to be a significant and interesting way that can be applied for EFL learners. In light of the findings, it is evident that using games may promote motivation and language acquisition. Then, it can be concluded that different instructional techniques can give different results. For this reason, it is suggested that EFL teachers, as well as EFL learners, should choose the best technique for learning a second language skill or sub-skill.

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