

## The Effect of Gamification on Jordanian EFL Sixth Grade Students' Reading Comprehension

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### ABSTRACT

This study investigated the effect of using gamification on Jordanian EFL sixth grade students' reading comprehension. The participants of the study were 71 students from two intact sections of the sixth-grade students from a public school in Jordan. They were assigned randomly into two groups: an experimental group (n=35) and a control group (n=36). A pre-/post-test was designed entailing three levels of reading comprehension (the literal, inferential and critical level). The experimental group was taught through using the instructional program of gamification by the *ClassDojo Website*, whereas the control group was taught conventionally by the Teacher's Book of *Action Pack 6*. The results indicated that there were statistically significant differences at ( $\alpha= 0.05$ ) between the experimental and control group students' mean scores on the overall reading comprehension post-test and in each level of reading comprehension (i.e. the literal, inferential and critical level) favouring the students in the experimental group who were taught by using gamification.

**Keywords:** ClassDojo Website, EFL, Gamification, Jordan, Reading Comprehension

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### INTRODUCTION

The world today has witnessed different changes that may influence the educational process. In Jordan, English is one of the primary school subjects for both basic and secondary stages. It becomes the language of many fields, such as education and technology. For these reasons, it is not acceptable to teach English skills as it was in the past, traditionally and out of date. Accordingly, there is a permanent need to improve teaching strategies to develop students' performance in English in general and reading comprehension, in particular, to make them active and motivated in learning.

The core process of the reading task is reading comprehension, which is considered an uneasy process. Reading comprehension is to understand and build the meaning of the printed texts (Kintsch, 1988). It is also a complex process that consists of many sub-processes, allowing the student to elucidate the meaning (Stricklin, 2011). Besides, it is a mental activity reinforcing students to use their ability to deal with the text and modify one's understanding and knowledge (Houtveen & Van de Grift, 2007). Moreover, reading comprehension includes a set of tasks: recall information related to reading a text, brainstorming through the use of high-level thinking skills, building mental images, and reaching to understand the whole construction of a text (Ness, 2011).

According to Longman and Atkinson (2004), there are three levels of reading comprehension. The first one is the literal level, which involves the reader to understand the surface meanings. Also, the inferential level involves the reader to read behind the ideas, not only literal words. The third level of reading comprehension is the critical level. In this level, students differentiate between facts and opinions, and the value of writing based on personal tendencies.

Gamification is a relatively new trend in education. Its essence is to use game elements, such as points and rewards. Gamification is adding game elements to the environments and contexts that do not appear as a game context (Deterding, Dixon, Khaled, & Nacke, 2011). Furthermore, Sheldon (2012) states that gamification "is

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the application of game mechanics to non-game activities'' (p. 75). Other researchers like Zichermann and Cunningham (2011) state that gamification engages students through the use of game procedures. Another definition of gamification is highlighted by Khaleel, Noraidah, Tengku, and Amirah (2016) as using game elements to improve students' engagement with the computer to solve problems with E- applications.

According to Sailer, Hense, Mandl, and Klevers (2013), there are game elements that are found in almost games today. These elements include (1) *points* which are used numeric accumulation after completing a task or an activity; (2) *badges* which entail representing the students' achievement visually; (3) *leaderboards* refer to the way of how the players are graded based on their results; (4) *progress bars/progression* which show the students' status in achieving specific goals. Additionally, another game elements are (5) *performance graph* which is used to show students' performance compared with the earlier performance; (6) *quests* are tasks to be accomplished during the game; (7) *avatars* are representing the student visually; (8) *profile development* is avatars' development. Moreover, game elements are divided into three levels: *elements in the lower level*, such as points, levels, badges, and achievements; *mechanics elements*, such as rewards and challenges among students; and *dynamics elements*, such as emotions and progression (Werbach & Hunter, 2012).

Incorporating game elements improves students' learning and makes the teaching process more interactive. Lots of games today are designed for many purposes, such as fun, but most of them use three essential elements that are found in designing the game. Firstly, *meta-centered activities* refer to activities with identified objectives. Secondly, *rewards* are given according to students' progress. Thirdly, the *progression* is given points according to students' level (Dickey, 2005).

Game mechanics are the essence of gamification. Using game mechanics allows teachers to make gamified lessons. Game mechanics are procedures that encourage the players to interact with the game (Weisfeld, 2000). Moreover, game mechanics activate students and create engagement in the learning process (Werbach & Hunter, 2015). The primary purpose of using game mechanics is to provide an opportunity to repeat the activities several times (Salen & Zimmerman, 2004). Besides, game mechanics are a way to guide the player towards a specific behaviour by focusing on achieving particular goals (Järvinen, 2008). Game mechanics are considered as game elements, such as points, badges and rules of the game like rewarding game system (Ibanez, Di-Serio & Delgado- Kloos, 2014; Robson, Plangger, Kietzmann, McCarthy, & Pitt, 2015).

Using gamification in second language learning is useful. The main purpose of gamification is to give students learning experiences in exciting and effective ways. Gamification can be used to make students motivated. It opens the doors for students to practice the language quickly and acquire some skills that can be beneficial to solve different tasks (Figueroa, 2015). Moreover, gamification provides a social atmosphere among students, which allows them to interact and communicate without any obstacles. In gamification, social context encourages students to express themselves and their feelings (O'Brien & Toms, 2008).

Moreover, there are different aspects of gamification that played a crucial role in the students' improvement in reading comprehension lessons. One of these aspects is the competitive atmosphere among students in the classroom. Every student attempted to complete reading activities to achieve specific points or rewards, which increases the competition among their classmates. This result is in line with Lee and Hammer (2011), who established that students in gamification learned in a competitive environment because all students sought to get an award. In this regard, Alsawaier (2018) established that gamification was suitable for providing time for students to compete with others through gaining points as soon as possible.

Another aspect of gamification is the collaborative atmosphere. This feature made students work collaboratively through pair or group works since all the activities could be solved either individually or in groups. Besides, this aspect of gamification made students more engaged and participated in the class. In this regard, Buckingham (2014) claimed that gamification facilitated designing tasks that could be shared in the classroom. Also, Denny (2013) and Grant and Betts (2013) highlighted that gamification improved students' participation and their activity among their classmates. Specifically, gamification introduced a productive environment that provoked students to continue self-learning and also provided appropriate and unlimited tasks for students in an attractive gamified way. In the same vein, Al-Smadi (2015) emphasized that gamification and its elements provided opportunities for students to discover and have them learning in a social context.

Research in Jordan shows that students' performance in reading comprehension is not at a satisfactory level. This result may be due to the use of conventional methods of teaching reading and unsuitable reading strategies that are used by some EFL teachers (Amoush, 2012). Many Jordanian EFL students have difficulties in identifying which strategy is better than others and how it can be successfully applied in reading comprehension lessons (Alkhwawdeh, 2011). It is claimed that a large number of Jordanian EFL students read slowly, which may be due to the inappropriateness of reading skills that the students have and use (Al-Makhzoumi, 1986). Moreover, Jordanian researchers (e.g., Al-Ansi, 1992; Fraihat, 2003; Al-Jamal, Hawamleh & Al-Jamal, 2013)

pointed out the problems that EFL Jordanian students have faced while they read. Additionally, their results showed that reading comprehension skills are not taught effectively, which leads to low in students' level of reading comprehension.

The use of gamification in teaching the English language is not broadly known. Thus, there is a lack of research about using gamification in education for enhancing language learning, especially reading comprehension. Hence, the current study seeks to identify the potential effect of gamification on Jordanian EFL sixth-grade students' reading comprehension.

### **Statement of the Problem**

Answering reading comprehension questions has been one of the problems that EFL students have faced. The researchers, as their work in different educational stages, have noticed that there is a general weakness in students' ability to answer reading comprehension questions. Such difficulty may be attributed to the fact that the traditional methods and strategies of teaching reading that are used by EFL teachers. Jordanian researchers (e.g., Jallad, 2006; Amoush, 2012) stated that the lower level of students' reading comprehension might be due to the improper use of reading comprehension strategies. Thus, using gamification in the teaching/learning process may be sufficient. Specifically, many studies (e.g., Poondej & Lerdpornkulra, 2016) showed a positive effect of using gamification and recommended to use it in the learning process.

### **Purpose of the Study**

This study aims to examine the effect of using gamification on Jordanian EFL sixth-grade students' reading comprehension.

### **Question of the Study**

The present study seeks to answer the following question:

Are there any statistically significant differences at ( $\alpha = 0.05$ ) in the sixth-grade Jordanian EFL students' mean scores on the reading comprehension post-test in (the literal, inferential and critical level) attributed to the teaching strategy (gamification versus conventional instruction)?

### **Significance of the Study**

This study tends to be significant as it enables the Jordanian EFL sixth-grade students to develop their reading comprehension skills by using gamification. Moreover, this study, to the researchers' best knowledge, is the first study that investigates the effect of using gamification on Jordanian EFL sixth-grade students' reading comprehension. Also, this study stems its significance from introducing an innovative strategy to teach reading comprehension. Optimistically, this study encourages other researchers to examine the effect of gamification on students' learning in different English language skills. This study is one of the few studies that examine the effect of using gamification on students' performance in reading comprehension.

### **Operational Definition of Terms**

**Gamification:** is the use of game mechanics, aesthetics and game thinking to engage students and stimulate their activity, and also to promote learning and solve problems (Kapp, 2012). In this study, it is to introduce game elements through the *ClassDojo Website*. Points, rewards and leaderboards are given to the students after they complete the assigned the reading activities.

**Reading Comprehension** is a process of extracting ideas and building meaning during interaction with the written language (Snow, 2002). In this study, it is the sixth-grade students' ability to comprehend a text in the literal, inferential and critical level. It is measured by the reading comprehension test, which is based on the outcomes of the four units in *Action Pack 6* under the study.

### **Limitations of the Study**

The generalizability of the study is confined to the sixth-grade students in a public school from the Directorate of Education-Russifa in Jordan, during the first semester of the academic year 2019/2020. So, the results reported in this study can be generalized to similar samples or contexts. The duration of the study lasted only for eight weeks. This study is limited only to the sixth-grade male students. Female students may give different results. The textbook used in this study is *Action Pack 6* (namely, units 2, 3, 4, and 5), which is used in Jordanian public schools. Another textbook with other content may be different. 5. This study is confined to five skills of reading comprehension (particularly, skim the text for the main ideas, scan the text for specific

information, deduce the meaning of the unfamiliar word, draw conclusions from simple reading materials, and finally to distinguish facts from opinions in simple reading materials).

## LITERATURE REVIEW

This section presents a review of related studies that examined the effect of gamification on students' learning. In this regard, Landers and Landers (2014) investigated the effect of using gamification on students' academic performance in the USA. The researchers chose one hundred and nine university students to participate in the study. A rubric was used to collect the data. Results showed that gamification improved students' performance.

Poondej and Lerdpornkulra (2016) studied the effect of a gamified course on Thai university students' engagement in learning. The participants were five hundred seventy-seven undergraduate students who were assigned to experimental and control groups. A questionnaire was adopted to collect the data. The findings revealed that the students in the experimental group were more engaged in their learning than the control group. This result indicated that gamification was more effective than the conventional method of teaching.

Rachels (2016) examined the effect of gamification on third and fourth-grade students' achievement. The participants were one hundred seventy-six Spanish students classified into control and experimental groups. A pre-/post test was used to gather data. The findings revealed that there were no differences among the students who were taught by gamification or conventionally.

Nahmod (2017) studied the potential effect of using gamification on fifty tenth grade students' vocabulary learning in the USA. A pre-/post test was used to achieve the purpose of the study. The results indicated that gamification helped students to improve their achievement in vocabulary.

Yildirim (2017) investigated the effect of gamification on ninety-seven Turkish university students' achievement. A test to measure students' achievement was used. The findings revealed that students' achievement improved after gamification was used.

Buhagiar and Leo (2018) investigated the effect of a gamified course for one hundred and six American university students' academic achievement. A pre-/post-test was used to collect the data. The findings revealed that students' achievement improved after using gamification.

El Tantawi, Sadaf and AlHumaid (2018) investigated the effect of using gamification on university students in Saudi Arabia. The participants consisted of ninety-two male students enrolled in an academic writing course. The results showed a significant improvement in students' academic writing skills that were attributed to the use of gamification.

Zhu *et al.* (2018) investigated the effect of using gamification on reading literacy in Hong Kong. The participants of the study were twenty-nine students from the elementary stage. Data were collected through a questionnaire and interviews. The results showed that gamification affected students' reading literacy positively.

Chen, Li and Chen (2019) investigated the effect of using gamification on fifty-five fifth grade students' reading performance in Taiwan. A pre-/post-test was used to gather the data. Findings pointed out that there were no statistically significant differences between the study groups who taught by the conventional method and by the gamification method. This result means that gamification was not effective in teaching reading.

## Concluding Remarks

Based on the reviewed studies, it seems that several studies (e.g., Landers & Landers, 2014; Poondej & Lerdpornkulra, 2016; Nahmod, 2017; Yildirim, 2017; Buhagiar & Leo, 2018; El Tantawi *et al.*, 2018; Zhu *et al.*, 2018;) concluded in their results that using gamification had a viable effect on students' performance. Nevertheless, studies (e.g., Rachels, 2016; Chen *et al.* , 2019) showed in their results that students were not affected positively after their studying by gamification. Most of the previous studies (e.g., Landers & Landers, 2014; Poondej & Lerdpornkulra, 2016; Yildirim, 2017; Buhagiar & Leo, 2018; El Tantawi *et al.*, 2018) studied the potential effect of using gamification on university students. On the other hand, other studies (e.g., Rachels, 2016; Nahmod, 2017; Zhu *et al.*, 2018; Chen *et al.* , 2019) investigated the effect of gamification on school students. Studies (e.g., Rachels, 2016; Nahmod, 2017; Buhagiar & Leo, 2018; El Tantawi *et al.*, 2018; Chen *et al.*, 2019) used a pre-/post-test to collect the data. Also, studies ( e.g., Poondej and Lerdpornkulra, 2016; Zhu *et al.* 2018) used a questionnaire to collect the data. This study investigates the effect of using gamification on Jordanian sixth-grade students' reading comprehension. This study is different from the reviewed studies since it started teaching three levels of reading comprehension for the participants for only eight weeks. The participants of the study were taught reading comprehension skills based on the instructional program of gamification. This

study uses a pre-/post-test of reading comprehension to investigate the effect of using gamification on sixth-grade students' reading comprehension.

## **METHOD AND PROCEDURES**

### **Design and Variables of the Study**

This study followed the quasi-experimental design in terms of using one experimental group and one control group. The independent variable was the teaching strategy with two levels: gamification versus conventional instruction. The dependent variable was the students' performance in reading comprehension post-test.

### **Participants of the Study**

The participants of this study were 71 male EFL sixth-grade students. They studied at *Al Idressi Secondary School for Boys*, a public school in the Directorate of Education-Russifa in Jordan. Two entire sections of grade 6 were chosen randomly from *Al Idressi School*. The first section was selected randomly as the experimental group with 35 students, and the second section was as the control group with 36 students. The students of the experimental group and control group were pre-tested to check their prior performance before implementing the instructional program of gamification. The experimental group was taught the reading activities of *Action Pack 6* textbook by gamification. The conventional instruction taught the control group based on the Teacher's Book of *Action Pack 6* without any signalling to the use of gamification strategy.

### **The Gamification and Conventional Strategies**

- A. In gamification strategy, students were taught as follows:
  1. The teacher introduced gamification strategy to the students and clarified its use. Also, the teacher explained the benefits of using gamification in the case of having it in reading comprehension lessons.
  2. The teacher asked students to log into the *ClassDojo Website* by using a password.
  3. They should respond to the posts and activities that the teacher posted on the website. Also, they should answer different questions related to reading comprehension skills. The teacher encouraged students to submit their answers on the website.
  4. After students respond to the questions, photos and activities, the teacher could give them points and rewards. He rewarded students who answered correctly, participate in the class, do a task, and help others. The teacher could show students' leaderboards at the end of the class to allow them to see their ranks and how many points were collected after positive or negative responses.
- B. In the conventional strategy, students were taught as follows:
  1. The teacher presented reading lessons to the students by asking questions about the title and giving them the new meaning of new vocabulary.
  2. The teacher also asked some questions about the pictures that were found in the lesson to facilitate students' understanding of the main ideas.
  3. The teacher also allowed students to read the text silently. While they were reading, they should answer specific questions that the teacher wrote on the board.
  4. The teacher also divided the students into pairs or groups to answer the questions. He gave feedback if it was necessary at the end of the lesson.

### **The Instructional Program of Gamification**

The researchers, to achieve the purpose of the study, designed an instructional program of gamification to improve the participants' reading comprehension by using the *ClassDojo Website*. The researchers also redesigned the reading comprehension activities in the targeted units to enable the participants of the experimental group to use gamification in reading comprehension lessons. There are three levels of reading comprehension under the study, mainly the literal, inferential and critical level. More specifically, the indices of the literal level are to skim the texts for the main ideas, scan texts for specific information and deduce the meaning of unfamiliar words. The indices of the inferential level are to draw conclusions from simple reading materials. Besides, the indices of the critical level are to distinguish facts from opinions in simple reading materials.

### **The Rationale for Designing the Instructional Program**

Some EFL teachers teach reading comprehension lessons conventionally, which may be resulting in low performance of the students' achievement in reading comprehension exams (Al-Makhzoumi, 1986;

Alkhwawaldeh, 2011; Amoush, 2012). Furthermore, EFL teachers usually give students the proper time to read the text, and then they explain the text by translating it word by word. They also ask questions to check students' comprehension of what they have read (Migdadi & Baniabdelrahman, 2016). These methods of teaching may not be adequate to develop students' reading comprehension, and as a result, make students get bored in the class. The instructional program was designed to offer the Jordanian sixth-grade EFL students' real opportunities to improve their performance in reading comprehension lessons by using gamification. Using gamification may help students to learn better and faster, as well as motivate them to continue in their learning.

### **Objectives of the Instructional Program**

The instructional program of gamification used in the current study aimed to:

1. improve the participants' reading comprehension.
2. increase their knowledge of reading comprehension skills.
3. raise their awareness of the benefits of using reading comprehension skills, especially those under study.
4. train them to use reading comprehension skills.
5. engage them with different reading activities.
6. teach them reading comprehension by gamification.
7. encourage them to use reading comprehension skills.
8. motivate them to answer reading comprehension questions.

### **The Instructional Material**

The instructional material used in this study is based on the reading comprehension activities of the four units (specifically, 2, 3, 4, and 5) from the *Student's Book* and *Activity Book* of *Action Pack 6*. The researchers redesigned these activities and uploaded them on the *Class Dojo Website*, which was used to teach reading comprehension lessons for the participants in the experimental group.

### **Duration and Content of the Instructional Program**

This instructional program was for only eight weeks, which started on 13 October 2019 and ended on 2 December 2019. The reading comprehension activities of units (2, 3, 4, and 5) of *Action Pack 6* were redesigned in the light of using gamification. The reading comprehension activities of each unit were divided into two 45 minute sessions a week for eight weeks.

### **Validity of the Instructional Program**

To achieve the validity of the instructional program of gamification, the researchers gave it to a jury of eleven experts in English curriculum and instruction, Arabic curriculum and instruction, educational technology, and linguistics. They were five professors, three instructors and three English language supervisors. The jury was requested kindly to review the program and to provide the researchers with any suggestions and recommendations on the handed program. The researchers made the amendments, as they recommended.

### **The Instrument of the Study**

A pre-/post-test for reading comprehension in the literal, inferential and critical level was designed. The questions of the test covered the following sub-skills: skim the text for the main ideas, scan the text for specific information, deduce the meaning of unfamiliar words, draw conclusions from simple reading materials, and distinguish facts from opinions in simple reading materials. The total number of the questions pre-/post-test was 16 questions, which were classified into three levels: literal, inferential and critical level. Each level represented 33% of the total questions. The pre-/post-test contained two reading passages with multiple-choice, wh-questions, completion, and true/false questions. The analysis of the test was congruent with the sixth-grade learning outcomes suggested by the General Guidelines, and General and Specific Outcomes of *Action Pack 6*.

### **Validity of the Reading Comprehension Test**

To ensure the validity, the pre-/post-test was reviewed by the same jury who validated the instructional program. The jury was asked kindly to read the test, check its content and its linguistic suitability. After the test was checked, the jury provided the researchers with their comments and suggestions. One of these suggestions was to add wh-questions as production questions for the test questions. The researchers made the modifications, as the jury recommended.

## Reliability of the Reading Comprehension Test

To ensure the reliability of the test of reading comprehension, it was applied on a pilot study of 18 students who were excluded later from the sample of the study. The test-retest method with two weeks between them was used. Pearson-correlation coefficients of the test-retest reliability were 0.84, 96 and 85 for the literal, inferential and critical level, respectively. The overall reliability was 0.85. Thus, these results indicate that the test is reliable and appropriate for the current study.

## Reliability of Scoring

The researchers and another EFL teacher marked the pre-/post- tests. Then, the reliability coefficient using the Holsti formula was calculated by comparing students' scores on the two tests. The inter-rater reliability was 0.94, which is suitable for this study.

## RESULTS OF THE STUDY

The question of the study was: *Are there any statistically significant differences at ( $\alpha = 0.05$ ) in the sixth-grade Jordanian EFL students' reading comprehension in (the literal, inferential and critical level) attributed to the teaching strategy (gamification versus conventional instruction)?* To answer this question, the researcher calculated t-test, means and standard deviations of the participants' performance on the reading comprehension post. Table 1 presents the results.

TABLE 1  
Results of T-test of the Students' Total Score of the Reading Comprehension Post-test

Group	N	Mean*	Std. Dev.	t-value	Sig
Experimental	35	16.22	5.50	7.497	0.000
Control	36	10.2	4.302		

\*(24)

Table 1 shows that *t-value* equals (7.497) for the total score of the reading comprehension post-test, and this value is significant at ( $\alpha = 0.05$ ), which means that there is a significant difference in students' reading comprehension post-test. Table 1 also shows that the differences in mean scores were in favour of the experimental group on the total reading comprehension post-test because the mean score of the experimental group (16.22) is greater than the control group (10.2). This result means that there is an effect of gamification strategy on improving the Jordanian EFL sixth-grade students' performance on the total reading comprehension post-test. The researchers also calculated the means and standard deviations of the students' performance on the reading comprehension levels in the post-test. Table 2 presents the results.

TABLE 2  
Means and Standard Deviations of the Students' Performance on the Reading Comprehension Levels in the Post-test

Reading Comprehension Levels	Group	N	Mean*	Std. Dev.
	Literal Level	Experimental	35	6.34
Control		36	5.1	2.745
Inferential Level	Experimental	35	4.91	2.843
	Control	36	3.1	0.974
Critical Level	Experimental	35	4.97	2.15
	Control	36	2	1.067

\*(8)

Table 2 shows that the students who are taught by the gamification strategy have the most significant improvement of the three levels of reading comprehension. In order to make sure that these differences between the experimental and control group students' mean scores are statistically significant, the researchers used

MANOVA test. This test was used to identify the differences in the three levels of reading comprehension for the students who are in the experimental group. The results are presented in Table 3.

TABLE 3  
MANOVA Results of the Students' Performance on the Reading Comprehension Levels in the post-test

Source	Dependent Variable	Sum Squares	df	Mean Square	F	Sig.	Eta Squared
Group	Literal Level	365.349	1	365.349	54.621	0.000	.442
	Inferential Level	381.500	1	381.500	85.476	0.000	.553
	Critical Level	187.356	1	187.356	19.347	0.000	.219
Error	Literal Level	461.525	69	6.689			
	Inferential Level	307.965	69	4.463			
	Critical Level	668.194	69	9.684			
Corrected Total	Literal Level	826.873	70				
	Inferential Level	689.465	70				
	Critical Level	855.549	70				

Table 3 shows that  $f$  equals (54.621) for the literal level, (85.476) for the inferential level and (19.347) for the critical level. These values are significant at ( $\alpha = 0.05$ ), which means that there is a significant difference in the participants' reading comprehension levels of the post-test. This result means that there is an effect of the gamification strategy on the three levels of reading comprehension in the post-test among the Jordanian EFL sixth-grade students.

## DISCUSSION OF THE RESULTS

The findings proposed in this study showed that there were statistically significant differences at ( $\alpha = 0.05$ ) between the experimental group and control group students' mean scores on the overall reading comprehension post-test and in each level of reading comprehension (the literal, inferential and critical level) due to the instructional program of gamification. Thus, it can be inferred that the experimental group students' performance outperformed the students in the control group in reading comprehension post-test in the three levels of reading comprehension. This result means that gamification is more effective than conventional instruction.

Different reasons led to the positive effect of gamification on the students' experimental group in the overall reading comprehension post-test and each level of reading comprehension. One of the possible vital justifications is the well-planned content of the reading activities based on gamification, which is designed to improve students' performance in reading comprehension levels. Every lesson plan had specific steps that guide both the teacher and students to complete the procedures of every lesson and achieve its outcomes. Thus, the well-planned activities of gamification affected students' reading comprehension positively.

Another explanation of these findings is the nature of gamification. Specifically, it was based on adding game elements, such as points, rewards and leaderboards with every activity that the students should complete. Gamification motivated students to learn in the learning environment, which made them active and learned with fun. Denny (2013) stated that using gamification engaged students in their learning. Besides, gamification was played an essential role in developing students' behaviour by inspiring them to attend the class with greater desire and longing, as well as focus on useful educational tasks. These benefits of gamification inspired the students to take the initiative in their learning and finally accomplishing productivity. Thus, the researchers supposed that the reading activities of gamification that were presented to the participants of this study helped students to be motivated and enthusiastic about pursuing their learning in reading comprehension activities. In the same line, Figueroa (2015) stated that gamification paved the way for students to practice the language and acquire some skills that may be beneficial to solve different tasks.

A further explanation for the students' superior performance in the experimental group might be due to the content of the instructional program. In this concern, the instructional program used in this study consisted of different activities. It focused on improving students' reading comprehension sub-skills, such as skimming the text for the main ideas and scanning the text for specific information. The researchers believed that completing the activities and tasks of gamification enabled the participants to learn reading comprehension skills effectively and, as a result, enhanced their performance in reading comprehension lessons. Similarly, Antin and Churchill (2011) and Da Rocha Seixas, Gomes and de Melo Filho (2016) averred that gamification improves students' academic achievement.

Moreover, the researchers believe that the use of activities based on gamification provided an appreciated opportunity to deal with various tasks of reading comprehension. Each unit in this study consisted of five reading activities, but after using gamification, the same activities became ten to twelve in each unit. Hence, the intensive gamified activities used in the current study were able to improve students' ability to answer reading comprehension questions. Each lesson of reading comprehension consisted of different reading comprehension activities that covered different topics in the selected units. This instructional program tried to achieve several aims. One of these aims was to improve the participants' reading comprehension and engage them in reading activities, which leads to motivating them to answer reading comprehension questions. Consequently, the instructional program helped in improving the participants' performance in reading comprehension lessons.

Additionally, the instructional program played a leading role in improving students' reading comprehension skills. It was designed to take into account the students' level and the difficulty level of the activities to inspire students to take part in these gamified activities. More clearly, the instructional program had different tasks and activities. These activities differed in their level, starting from the literal level as an easy one to the inferential level as a moderate one, and finally to the critical level as a complex one. This variation in the complexity of reading comprehension levels supported the variety of questions used in reading comprehension lessons. So, this aspect enabled the students from different levels to be active during the gamified activities. At this point, Salen and Zimmerman (2004) confirmed that gamification offered real opportunities to repeat and interact with the activities several times based on the student's level.

It seems that the instructional program of gamification improved the students' ability in reading comprehension in different ways. Firstly, the participants enjoyed the use of gamification since this was the first time for them to learn in an enjoyable environment out of conventional instruction. They always broke the routine in dealing with reading comprehension texts. Subsequently, classes of reading comprehension were full of excitement and joyfulness. These results are in the same vein with Al-Azawiet, Al-Blushi & Al-Faliti (2016), who stressed that gamification helped the teachers to make their lessons seem more interactive. In this respect, Johnson, Adams Becker, Estrada, & Freeman (2014) stated that gamification can make students more engaged in the learning process.

To conclude, the findings reported in the present study are consistent with the findings of the previous studies of (e.g., Zhu *et al.*, 2018) which stressed that the use of gamification is effective in improving students' reading comprehension. Also, the findings of this study are consistent with the findings of (e.g., Landers & Landers, 2014; Poondej & Lerdpornkultra, 2016; Nahmod, 2017; Yildirim, 2017; Buhagiar & Leo, 2018; El Tantawi *et al.*, 2018) which showed that gamification is viable as a teaching technique, and so it can be used in language learning. Nevertheless, the findings proposed in the present study are inconsistent with the findings of studies of (e.g., Rachels, 2016; Chen *et al.*, 2019) which showed that gamification is not effective in language learning.

## RECOMMENDATIONS

Based on the findings of this study, several recommendations are presented as follows:

1. EFL teachers are called to use the instructional program of gamification, mainly under the study to improve students' reading comprehension.
2. The Ministry of Education should train teachers through conducting training sessions and workshops to qualify and educate them to use gamification strategy in their teaching.
3. Researchers are invited to conduct different studies to investigate the effect of using gamification on other grades and other English language skills (e.g., listening and speaking).

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