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Role of Gamification in Doing Homework by Iranian EFL Learners

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Abstract. Gamification is the process of integrating games digitally to motivate people to achieve their goals. It could be employed in educational settings to maximize the enjoyment and engagement of learners and inspire them to continue learning. This paper addresses the design and implementation of Gamification as a tool for doing homework by Iranian EFL learners. Two groups of 30 male and female students were chosen for experimenting using Kahoot. Both groups take a pre-test as the treatment. The control group does their homework conventionally, but the experimenting group does it by Kahoot. At the end of the term, both groups take a post-test. The experimenting group receives a gaming survey, in which 10 English instructors are asked to complete an attitude survey to investigate their attitudes toward using Gamification. The T-test formula used in the experiment analyzes the results of the pre-test and post-test. The results revealed that the experimenting group outperformed the control group. Using Gamification increased the learners' motivation, and the instructors welcomed the use of this method. In conclusion, it is stated in this article that using Gamification can be useful in teaching English to Iranian EFL adults.

Keywords: Attitude, game, gamification, homework, kahoot, motivation

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1. Introduction

Motivating learners has always been considerable concern for EFL teachers. Consistently, they have used different techniques to motivate their learners but they were not satisfied with the result every time, and the search for finding the best way is continuing. The usage of games in teaching and learning can increase students' motivation (Khairani et al., 2020). Nowadays, there is a new trend in teaching a new language, which is called Gamification. The first time Gamification was used, with the present concept, was in 2003 when Nick Pelling, a British designer, used it in a website called Conundra to promote consumer products. And nowadays, Gamification started to get more mature, but it still is a new topic in TEFL.

In recent years in Iran, the use of computers and the internet in language teaching has grown, but still, there is a limited number of studies on how this method works when used for teaching English as a foreign language. Therefore, there was a need to investigate how this works in Iran.

Searching through generations demonstrates that it is common to use games in education, but Gamification is quite a new concept. Badges, rewards, and cumulative, competitive scores provide visible incentives for student behaviors, but Gamification offers much more than these simple ideas. The most valuable reasons to encourage Gamification in education are its inspiring elements, such as immediate feedback, feeling of achievement, challenge, and defeating (Kapp, 2012).

2. Literature Review

In the third millennium, where technology is the basis of every action and people tend to spend most of their time using computers and mobile phones, there is a chance for teachers to use Kahoot as an opportunity to employ the potential capabilities of Gamification in language classes. Using Kahoot tagged to Gamification provides a significant opportunity to have a good teaching experience with superior results. It seems that the method is more acceptable by adult learners because it provides a

safe environment to experiment and make mistakes through the learning process.

Gamification has been defined in many different ways. For instance, in (Kapp, 2012, p. 10), Gamification is defined as the use of gameplay mechanics for non-game applications (also known as 'funware'), particularly consumer-oriented web and mobile sites, to encourage people to adopt the applications. Or in (Deterding et al., 2011), Gamification is described as the integration of game mechanics into a non-game environment to give it a game-like feel, or in (Werbach & Hunter, 2012, p. 26), it is stated "Gamification: The use of game elements and game-design techniques in non-game contexts". The basic of Gamification is formed by game elements such as reward and competition, as demonstrated by Foursquare. Accordingly, Gartner, an information technology research company known worldwide, has stated that 50% of companies will be using Gamification strategies in 2015 (Gartner, 2011). Zoe (2018) demonstrated that, among 400 employees, 85 percent said that they would spend more time on gamified software.

There is increasing evidence that using Gamification is approved as an impressive learning technique (Groening & Binnewies, 2019; Lopez & Tucker, 2019). This growth of using Gamification has attracted the attention of educational institutes and schools, raising the question, "Can Gamification be useful in education?". Games have been used in education for generations, and they have the potential to change a teacher-oriented class to a student-oriented one (Wichadee & Pattanapichet, 2018), but Gamification is quite a new subject in education. Badges, rewards, and cumulative, competitive scores provide visible incentives for student behaviors, but Gamification offers much more. The most valuable reasons to encourage Gamification in education are its inspiring elements, such as immediate feedback, feeling of achievement, challenge, and defeating (Kapp, 2012).

As mentioned by Bai, et al. (2020):

"We find four main reasons why learners enjoy gamification: (a) gamification can foster enthusiasm; (b) gamification can provide feedback on performance; (c) gamification can fulfill learners' needs for recogni-

tion; and (d) gamification can promote goal setting. We also find two major reasons for learners' dislike of gamification: (a) gamification does not bring additional utility and (b) gamification can cause anxiety or jealousy." (p. 30)

Some research studies state that using Gamification in education increases motivation and participation in a course (Hakulinen et al., 2015; Lee & Hammer, 2011; Muntean, 2011). However, some others are against this idea. For example, Hanus and Fox (2015) investigated the effects of Gamification on students' motivation, social comparison, effort, satisfaction, empowerment, and academic performance over 16 weeks. They found that gamified course students had lower motivation, satisfaction, empowerment, and achievement scores than traditional course students.

Werbach and Hunter (2012) stated that the vast majority of companies and websites that used Gamification have focused on its three elements called the PBL triad. PBL stands for Points, Badges, and Leaderboards, and it seems they are the most crucial elements about Gamification, which is necessary to be encountered in a gamified app. Althogh all of these elements can stimulate the learners to do the task, there are a lot of educational games that do not have all of these elements but still engaging.

According to Werbach and Hunter (2012), there are three types of Gamification, i.e., internal, external, and behavior-change Gamification. Companies use internal or enterprise Gamification to enhance their productivity. External Gamification is used to improve the relationships between companies and customers. And behavior-change Gamification tries to form new beneficial habits among people. Altogether these educational Gamification systems try to establish a novel profitable manner among learners.

Reviewing nine studies on Gamification showed that the results were mostly positive including elevated motivation, engagement, and enjoyment (Hamari et al., 2014). And the literature has further demonstrated that the use of Gamification in education increases motivation and participation in a course (Hakulinen et al., 2015; Lee & Hammer, 2011; Muntean, 2011).

It's getting hard to motivate students to do their homework these

days. Even the students that are active inside the classroom do not do their homework, and there is still no answer for that. Teachers and researchers are searching for a way to change the behavior of not doing homework into doing it and here is the new trend in TEFL, which is called Gamification. According to Werbach and Hunter (2012), the leading purpose of Gamification in education is behavior-change because it might be able to change the behavior of not doing homework into doing it.

Various studies do appear in the literature, but the number is insufficient, especially concerning experimental studies about Gamification (Domnguez et al., 2013; Hanus & Fox, 2015). There are a few studies in this field, but almost none of them addressed the effect of Gamification on doing homework. This study will make a major contribution to the literature and provides a valuable sample and resource for teachers and schools craving to implement the Gamification method, especially in the Iranian context.

The current study was designed to answer questions such as the following questions:

1. Does Gamification have any significant impact on doing homework for Iranian EFL learners?

2. Are learners' motivation increased when utilizing Gamification in TEFL?

3. What are the teachers' attitudes towards employing Gamification in their classes?

3. Methodology

The present study was carried out to analyze the effect of using Gamification on doing homework for Iranian EFL adult learners. In recent years in Iran, especially in Tehran, you could find institutes that have online classes for teaching Languages. But teaching English using the internet was not yet accepted as a primary method among learners. Gamification, a new trend in TEFL, has become a tool for supporting users to engage in many different subjects, like expanding user activity (Hamari,

2013). Marczewski (2013) gives this definition for Gamification: "The application of gaming metaphors to real-life tasks to influence behavior, improve motivation and enhance engagement." Marczewski (2013) advises concentrating on words such as engagement, motivation, behavioral change, and productivity. These features can enormously help the behavior-change, which is the aim of Gamification in education.

3.1. Design and context of the study

The current study was mainly aimed at investigating the role of Gamification in doing homework for Iranian adult EFL learners. The design of the study was experimental because it was necessary to go under some treatments and procedures. In the design of experiments, the experimenter is often interested in the effect of some process or intervention treatment on some objects or experimental units. The paradigm of this study was quantitative and the research type was a quasi-experimental design.

3.2. Participants

The study is carried out on Iranian learners. The target population was all Iranian adult EFL learners. The sample population was chosen from a branch of an English language institute, named Hermes, located in Tehran. The sample contains 60 students divided into four classes of 15. The age difference between students was 21 and 25 years old. At the time of the study, the students were in speaking class, and the level was basic.

The subjects were divided into four groups; two experimental groups and two control groups. The experimental groups' classes were held on Sundays and Tuesdays, one from 16 to 18, and the other one from 18 to 20. The control groups' classes were held on Saturdays and Wednesdays at the same time as experimental groups' classes. Each classroom contains 15 students. It is worth mentioning that at the time of registration, students were asked if they have smartphones. If the person did not have a smartphone, his or her name was registered in the control group classes. There were male and female students in all classes, but the number of them was not equal.

Table 1: Demographic Background of the Participants

No. of Students	60
Gender	36 Females & 24 Males
Age	21 to 25
Native Language	Persian
Target Language	English

3.3. Instrument

3.3.1. Digital instruments and kahoot

The main instrument used in this study was a web-based program, containing a series of educational materials in the form of the Gamification known as Kahoot. This program is accessible through Kahoot's official website, http://www.kahoot.com, which is free for teachers and students. Kahoot is an online classroom review game, that students join using smartphones to answer questions. The procedure of establishing game rooms on this platform is easy and fast. Internet users often publish room pin online so strangers can join the Kahoot. Kahoot uses an evaluation system that rewards correct responses and response speed. If the classes are equipped with high-speed internet and VHD, the teacher could use Kahoot inside the classroom to review taught units. But since the focus in this research is on homework, it did not take place inside the class, and the teacher did not need a video project to share the questions. The teacher shares the pin code with experimental group students through the telegram group, and the students enter that pin in their Kahoot app, which was installed on their smartphone on the first day of the class, and then do their homework.

The teachers need to create an account at http://www.Kahoot.com, and then the website gives this opportunity to the teachers to perform their tests, and by sharing the pin, the students can do the test. Kahoots can be made in 4 different forms. Based on the students' needs, the teacher can decide which one is more appropriate for them. One of these forms is the Quiz. The teacher makes a multiple-choice test with the help of this platform. The other form is called Jumble. In this form,

the students should drag the answers into the correct order. The third form is the discussion, and it is also a multiple-choice test, but there is no right or wrong answer, and the students merely answer based on their opinion. The fourth form is the survey, and as the name shows, in this form, the teacher can gather audiences' opinions. It seems that for reviewing the units, the Quiz and Jumble one can work the best. In this research, Quiz and Jumble forms were used by the teacher.

Using Kahoot has two formats. One of them is appropriate to use inside the classroom, and the other one is suitable to apply outside the class. For inside the class format, the teacher can take a computer to the class and share the questions, which is designed based on the students' units at home through a VHD or any other devices with her students. The students answer the questions by the help of Kahoot app installed on their smartphones. For outside the class format, the teacher puts the questions into the Kahoot website and clicks on challenge form to assign that as the students' homework. This research has opted the second format because the focus in this research is on this research is on the effect of Gamification on doing homework. When the teacher clicks on challenge form, the website gives her a pin code, which the teacher should share with the students. In this research, the teacher shares pin code through the telegram group, and students can enter that pin code in their Kahoot app and do their homework. On the morning of the next session, the students can see the first three students with the most correct answers. The first person will be shown as the champion, and other students can find out about their scores through the Kahoot app.

3.4. Data collection procedure

Before starting the course, both control and experimental groups were provided a pre-test, and the results were gathered by the researcher to compare with the results of the post-test at the end of the research.

Students in the EG received their homework in Kahoot form and the students just needed the pin code which their teacher shared through their telegram group. They had to get online to get the pin code and enter it into their Kahoot app, which was downloaded on their smartphones in the first session of the class, and do their homework online. At

the end of the test, they can see their score and find out how many correct answers they had, and if there were any incorrect answers, they could see the correct answer and found out their mistakes. Since the deadline for doing the homework is at 8 AM of the next session, the students can see three top learners who had the most correct answers after the deadline. The students are informed that the score of this homework does not affect their final exam score, but doing or not doing homework will affect their final exam score.

After 10 sessions of teaching, on the 11th session, both experimental and control group classes are provided a post-test for their final exam, which was the same as the pre-test questions. The exam is in paper and pencil form. Some questions are taken from the website, http://www.oup.elt.com, which is designed by the Oxford Word Skills book, and the listening part is taken from the Tactics for Listening book, on the pages 98 and 99, which is designed to test the students' knowledge for units 1 to 4. The students had about 45 minutes to answer the questions.

The principal instructor plus nine others were given a survey titled Survey of Teachers' Attitudes toward Information Technology (Knezek & Christensen, 1996) to complete it in one week. They were given enough time to avoid stress and anxiety while filling the survey. The survey was written by Knezek and Christensen (1996), Texas Center for Educational Technology, University of North Texas.

The students in two experimental classes receive the Instructional Materials Motivation Survey (IMMS) developed by Keller (2006). The tool included 35 Likert scale questions designed to measure learner perceptions following the guidelines of the IMMS scoring guide (Keller, 2006). At the end of the 10th session, all the students in two experimental classes got a piece of this survey to answer, and they were supposed to give it back to the teacher on the 11th session. The students were given enough time to avoid stress, anxiety, and tiredness while filling the survey.

3.5. Data analysis procedure

After gathering, at first, the normality of the pre-test and post-test

of the homework is evaluated. Secondly, the KR-21 reliability is computed for the pretest and posttest of homework. In the third step, an independent-sample t-test is conducted to compare the experimental and control groups' means on the pre-test of homework to show that they were homogenous in terms of their ability in doing homework before the administration of the treatments. In forth step, an independent-sample t-test is run to compare the experimental and control groups' means on the post-test of homework to probe the first null-hypothesis. In the fifth step, based on the median score of 32 on the post-test, the subjects are divided into two groups of high and low. Then an analysis of chi-square is performed to compare the number of homework they had done. In the sixth stage, the frequencies, percentages, and analysis of chi-square are run to compare the responses to the gamification questionnaire with 35 items to examine the second null-hypothesis.

The following analysis is run on the teachers' survey data; the frequencies, percentages, and analysis of chi-square are performed to compare the responses to the first 105 items of the teachers' survey questionnaire to interrogate the null-hypothesis 3- 1. The frequencies, percentages, and analysis of chi-square run to compare the responses to 10 items on electronic email items of the teachers' survey questionnaire and examine the null-hypothesis 3-2. And also, the frequencies, percentages and analysis of chi-square are run to compare the responses to 10 items on the World Wide Web items of the teachers' survey questionnaire to probe the null-hypothesis 3-3. Again, the frequencies, percentages, and analysis of chi-square are run to compare the responses to 10 items on multimedia items of the teachers' survey questionnaire to scrutinize the null- hypothesis 3-4. The frequencies, percentages, and analysis of chi-square are run to compare the responses to the 10 items on professional creativity items of the teachers' survey questionnaire to verify the null-hypothesis 3-5. And at last, the frequencies, percentages, and analysis of chi-square are run to compare the responses to 10 items on the use of computers in classroom items of the teachers' survey questionnaire to investigate the null-hypothesis 3-6.

4. Results

The ability to finish homework included three sets of data; experimental and control groups' scores on pre-test and post-test, and the two groups' frequencies of the finished homework. The two groups' scores on the pre-test and post-test of the homework are analyzed using independent-sample test, and the frequencies of finished homework are analyzed through a non-parametric chi-square test.

An independent-sample t-test is run to compare the experimental and control groups' means on the post-test to scrutinize the first null-hypothesis as "using Gamification did not have any significant impact on doing homework of Iranian EFL learners". Table 2 displays the results of the descriptive statistics for the two groups on the post-test. The results indicate that the experimental group (M = 32.73, SD = 1.94) had a higher mean than the control group (M = 28.57, SD = 3.82) on the post-test of the homework.

Table 2: Descriptive Statistics of Posttest of Homework by Groups

	Group	N	Mean	Std. Deviation	Std. Error Mean
Posttest	Experimental	30	32.73	1.946	.355
	Control	30	28.57	3.821	.698

An analysis of chi-square is run to compare the frequencies of the five choices. As displayed in Table 3, the "strongly agree" choice (n = 404, Residual = 254) is selected more than what was expected. That is to say, the participants strongly agreed with the idea that Gamification increased their motivation.

Table 3: Frequencies and Residuals of Attitude towards Motivation Increase

	Observed N	Expected N	Residual
Strongly Disagree	68	150.0	-82.0
Disagree	89	150.0	-61.0
Uncertain	44	150.0	-106.0
Agree	145	150.0	-5.0
Strongly Agree	404	150.0	254.0
Total	750		

The other choices are selected lower than what was expected, i.e. "agree" (n = 145, Residual = -5), "disagree" (n = 89, Residual = -61), "strongly disagree" (n = 68, Residual = -82), and "uncertain" (n = 44, Residual = -106). The results of chi-square is ($x^2(4) = 574.81, p < .05, r = .875$ representing a large effect size). Thus, the second null-hypothesis was rejected.

4.1 Attitude towards using gamification in classrooms

The results of chi-square ($x^2(6) = 20.68, p < .05, r = .516$ representing a large effect size) indicated that there were significant differences between the respondents' attitude towards the importance of computers in classrooms. Thus, the null-hypothesis 3-5 as "there were not any significant differences between the teachers' attitude towards the importance of computers in classrooms" was rejected.

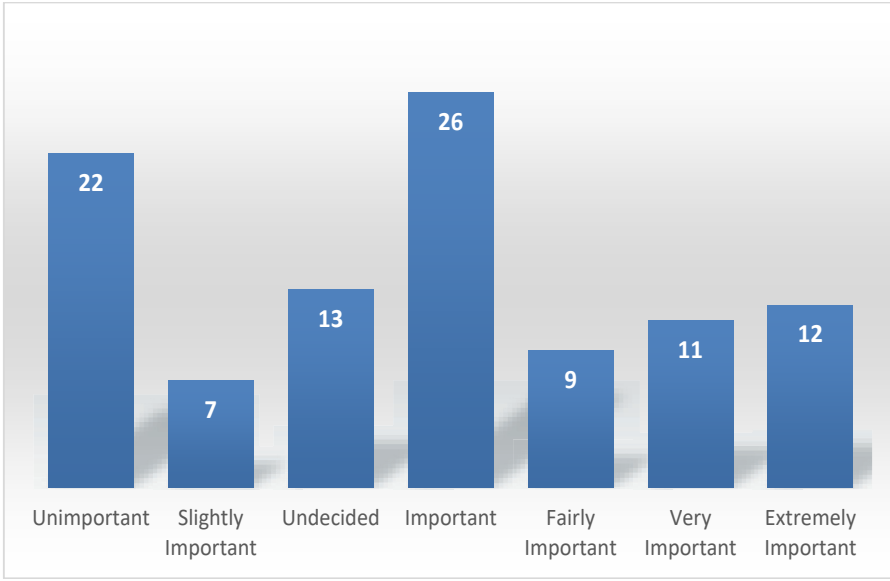

Figure 1. Attitude towards the importance of gamification in classrooms

5. Discussion

There were three main questions in this study:

1. Does Gamification have any significant impact on doing homework regarding Iranian EFL learners? The answer is yes. In the main study, the control group and the experimental group had normal distributions. The mean score of the control group was 28.57, and the mean score of the experimental group was 32.73. The results showed that the experimental group outperformed the control group, which means the training method was effective.

The results of this study approve the findings of Turan et al. (2016). They had found that the experimental group students using Gamification earn better achievement scores than the control group students using the traditional method. Besides, the studies of Baber (2015) also confirmed as he reported that students found the gamified course generally acceptable, even though Gamification did not energize them.

2. Are learners' motivation increased when utilizing Gamification in TEFL? As seen in the second study, which students filled out the Gaming survey in which the choice "strongly agree" was selected more than what was expected, that is to say, the participants strongly agreed with the idea that Gamification increased their motivation.

Our findings also support the study of Chevtchenko (2013). In his thesis, he focused on primary school students in the same age of 7 to 8 years, and finally, he concluded that by adding game elements to non-game settings, Gamification provides opportunities to tap the motivational power of games in many fields, including education. Other studies also concluded that using Gamification in education increases motivation and participation in a course (Hakulinen et al., 2015; Lee & Hammer, 2011; Muntean, 2011). But the findings of this research are not in line with Hanus and Fox (2015), who investigated Gamification's effects on students' motivation, social comparison, effort, satisfaction, empowerment, and academic performance over 16 weeks. They had found that gamified course students had lower motivation, satisfaction, empowerment, and achievement scores than traditional course students.

3. What are the attitudes of the teachers toward employing Gam-

ification in their classes? The last research question targeted teacher's attitudes towards the use of Gamification in classrooms. The Teacher Survey questionnaire had 155 items. The first 105 items measured the overall attitude towards working with computers. The next 50 items measured five areas of attitudes; electronic emails, World Wide Web, multimedia, professional creativity, and the use of computers in classrooms.

Regarding the third part of the present study, the overall results from the instructors' survey revealed that the Iranian teachers were willing to use the computer in their classes. Their general attitude toward computers also measured positive.

These results support the findings of Wang (2011), who examined the use of communicative language games for teaching and learning English in Taiwanese elementary schools. In their research, 150 teachers in Taiwanese primary schools were given questionnaires about subjects. The teachers not only reported benefits and valued features of these games but also were satisfied with using this method in their teaching syllabus.

6. Conclusion

Teaching foreign languages has always been a concern in educational procedures, and TEFL or TESL is not an exception. Besides, with the growing world of digital science and computers, the need for knowing a foreign language is indisputable. English as an International language plays an important role to accompany the world of computers and the Internet. Therefore, knowing English as a foreign language, knowing to run a computer, and working with the internet and smartphones are the desperate needs of any human being in present world.

Nowadays, people around the world, spend many hours on their computers or smart phones. So, researchers found ways to teach them how to make the most out of their favorite apparatus. In the field of teaching languages, different applications were used to provide a benign virtual learning context. Language games apps for smartphones have been made to make learning more fun and enjoyable. Gamification is the newest way of adding game rules into teaching and learning foreign languages.

In recent years, some countries started using Gamification in their education and used computers and the internet in schools for all fields of teaching. In language learning, many applications and web-based programs have been developed and used. Some researchers have done studies in this field, and most but not all of them have reported positive effects of utilizing Gamification in teaching.

Besides investigating the instructors' attitude toward Gamification and its use, this study aimed at scrutinizing the usefulness of using Gamification in the Iranian context. The results confirmed that other than motivating learners to learn English, it's also a more effective way of teaching Iranian learners than traditional methods.

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