

أثر الألعاب التعليمية الرقمية على تحصيل طلبة الصف السابع في اللغة الإنكليزية والاحتفاظ

بالمعلومات

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(الإيداع: 27 حزيران 2024، لقبول: 26 آب 2024)

الملخص:

هدفت الدراسة الحالية إلى تعرف أثر الألعاب التعليمية الرقمية على تحصيل طلبة الصف السابع في اللغة الإنكليزية واحتفاظهم بالمعلومات. اعتمدت الباحثة المنهج شبه التجريبي حيث قامت الباحثة باختيار عينة مقصودة من طلبة الصف السابع مؤلفة من (60) طالباً وطالبة مقسمين إلى مجموعتين: مجموعة تجريبية (30) طالباً و طالبة تم تدريسهم باستخدام الألعاب التعليمية الرقمية ومجموعة أخرى ضابطة مؤلفة من (30) طالباً وطالبة درسوا اللغة الإنكليزية في الوجدتين 12-13 بالطريقة التقليدية، قامت الباحثة بتطبيق اختبار تحصيلي بعدي مباشر ومؤجل على العينة وعولجت البيانات باستخدام برنامج SPSS حيث اختبرت الفرضيات الصفرية باستخدام اختبار t-test عند مستوى الدلالة (0.05). أظهرت نتائج الدراسة أن تحصيل طلبة المجموعة التجريبية في الاختبار التحصيلي البعدي أعلى من تحصيل طلبة المجموعة الضابطة، وهذا يشير إلى الأثر الإيجابي للألعاب التعليمية الرقمية على تحصيل الطلبة وكان احتفاظ طلبة المجموعة التجريبية بالمعلومات أفضل من طلبة المجموعة الضابطة الذين درسوا دون تطبيق الألعاب الرقمية. وقد تم طرح عدد من المقترحات لإجراء المزيد من الأبحاث لدراسة تأثير الألعاب الرقمية التعليمية على المواد والمراحل التعليمية الأخرى.

الكلمات المفتاحية: الأثر – الألعاب التعليمية الرقمية – التحصيل – الاحتفاظ بالمعلومات – طلبة الصف السابع

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The Effect of Educational Digital Games in Seventh Grade Students' Achievement in English and Retention of Information

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(Received: 27 June 2024, Accepted: 26 August 2024)

Abstract:

This study aimed at exploring the effect of educational digital games in seventh grade students' achievement in English in Damascus schools and measuring its effect in students' retention of information. A quasi- experimental approach was undertaken in this study. The researcher selected a purposeful sample of seventh grade students consisting of (60) male and female students divided into two groups: an experimental group (30) male and female students who were taught using digital educational games and another control group consisting of (30) male and female students who studied English in units 12-13 using the traditional method. The researcher applied an immediate and postponed post-achievement test to the sample. The SPSS statistical program was used to analyze the study data and the hypotheses were tested at the level of significance ($\alpha= 0.05$).

The findings of the study showed that educational digital games had positive effect on students' English learning achievement. Students who were taught English by using games improved their achievement more than those who were taught by using the traditional method of teaching. In addition, Students of the experimental group retained information better than those in the control one. A number of suggestions were proposed for further researches to examine the effect of the educational digital games on other subjects and educational stages.

Keywords: Effect, Educational Digital Games, Seventh Grade Students, Achievement, Retention

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Introduction

The world of education is changing rapidly, and much of that is due to advances in technology. We know that our students are knowledgeable about and comfortable with technology. They are exposed to it every day. They play games on the computer. They receive and send e-mails and they search for information on search engines. They work, play, and socialize online. Even our youngest learners see their parents and family members on laptops, smart phones, and tablets and this is changing their expectations on education. Therefore, teachers need to motivate their learners by appealing to their interests and thereby making their lessons relevant to the specific needs of these learners. One way of doing this is to incorporate interactive games into language teaching and learning.

In order to study or acquire a language, learners have to know the fundamental structure of the language and more words to be able to communicate with other people well. Most EFL learners have difficulties in communicating in English language because of their limited amount of vocabulary. They forget new vocabularies because they do not use them in their daily life. In order to overcome these challenges they should use effective strategies which enhance English achievement and retention. One useful strategy to encourage learning a foreign language is using digital games. Some teachers think that computer games are a waste of time and prefer not to use them in classroom since games sometimes have been considered only for its one element that is fun. However, a game should not be regarded as a marginal activity filling in odd moments when the teacher and class have nothing better to do. Games ought to be at the heart of teaching foreign languages, games should be used at all the stages of the lesson, provided that they are suitable and carefully chosen. In fact, among several strategies used to improve students' proficiency such as visual aids, CALL (Computer Assisted Language Learning), drama, role -play, and so on, digital games are another useful strategy to promote students' language proficiency (Warschauer, 2000, 303-318). In light of what has been mentioned, the researcher suggests the possibility of studying the effect of educational digital games in learning English.

1- Research problem

In the sophisticated world of the 21st century, learners are more familiar with technology than their teachers are. They are growing up in today's world that relies heavily on technology. Learners have become preoccupied with high-tech inventions for entertainment to spend their time such as computer, ipads, tablets, video and play-station games, so they learn how to use these technologies unconsciously. However, there is minimal variation in the teaching style used in teaching English at schools. Most teachers enjoy traditional methods such as grammar translation, audio- lingual or to some extent direct method. They teach grammar out of context for its own sake as a practice of specific grammatical structures and they still consider grammar as the organizing principle of the course where all topics focus on grammar and not on the topic itself. When teaching is based on traditional methods, learners are not interested in developing the second language, nor are motivated to learn it for the purpose of communication. So the students will not play the role of active speaker. Therefore, in this system when students are asked to do some oral exercises, they prefer to keep silent because they are not used to speaking English in front of others and are afraid of "losing face" due to their likely errors (Sauvé, Kaufman, & Renaud, 2007). Therefore, more attention must be centered on the use and effectiveness of digital games.

The researcher conducted a pilot study on 4/ 2/ 2024 on 20 seventh grade teachers who teach English in Damascus schools to find out the methods they use in teaching English and investigate their attitudes towards modern teaching methods, which may contribute to increasing students' achievement. The results of the study were as follows:

- Eighty percent of teachers use traditional methods such as grammar translation, audio-lingual or to some extent direct method.

- Only twenty percent of teachers use effective instructional means in order to meet the needs of students within the 21st century.
- Seventy percent of teachers are not interested in searching for modern teaching methods of English.
- Only ten percent of teachers have prior knowledge of applying digital games in their classes.

Furthermore, a review of literature shows that, most studies examined the effect of digital games on learning vocabularies and grammar (Jalali & Dousti, 2012; Musilova, 2010; Thomas, 2005). Nevertheless, there are still insufficient studies in addressing whether digital games can successfully help students to retain information and a few researchers have experimentally examined the effect of educational digital games on students' achievement in English.

In addition, the crisis in Syria has a negative effect on education. Our students face daily challenges of over-crowded classrooms, the psychological scars of traumatic experiences, possible curricula and language problems; inadequate quality of teaching and a lack of essential learning materials. So, There is an urgent need to offer great potentials in both motivating and facilitating learning that provide students with the knowledge, skills, and support required to build a new future. In order to help those students, who suffer both physically and psychologically, games can be used in classes. So, the problem of the research can be summarized in the following question: What is the effect of educational digital games in seventh grade students' achievement in English and retention of information?

2 –Significance of the Research

The research importance emerges from the following points:

- 1- Positive gains in this study could be employed by English teachers, materials developers, and ELT practitioner in teaching English.
- 2- Results of this study may provide information for administrators in state schools trying to decide whether to invest in digital games for their classrooms.
- 3- The findings of the study might pave the way for researchers to investigate the application of digital games in other areas and components of the English language pedagogy.

3-Research Aim

The research aims at achieving the following:

- Measuring the effect of using the educational digital games in learning English.
- Measuring the effect of using the educational digital games in students' retention of information.

4-Research Question

The research tries to answer the following question:

- What is the effect of using the educational digital games in learning English?
- What is the effect of using the educational digital games in students' retention of information?

5-Research Hypotheses:

According to the research aims and research question, the research hypotheses which will be tested at the ($\alpha = 0.05$) level of significance are as follows:

- 1- There is no statistically significant mean scores difference between students in the experimental and control groups in the immediate post- achievement test.
- 2- There is no statistical significant mean scores difference between students in the experimental group in the pre and immediate post-test.
- 3- There is no statistically significant mean scores difference between students in the experimental and control groups in the postponed post- achievement test

6- Research Limitations

- Human limitations

The research was restricted to seventh grade students.

- Spatial limitations

The research was applied in Damascus school: Layeek School.

- Time Limitations

The study was carried out during the second semester of the academic year 2023-2024.

- Educational Limitations

The research was restricted to units twelve and thirteen of the English language course "Emar English Series seventh grade "

7- Research Methodology

A quasi-experimental approach was undertaken to investigate the effect of educational games on seventh grade students' achievement in English.

7-1-setting and participants

A total of 60 sixth grade students form the purposeful sample. Two sections in the selected school (Layeek School) were assigned randomly: the control group (30) and the experimental group (30) students. Since there are two types of computer games, and these include serious games, which are designed for educational purposes and commercial games also referred to as console games. The experimental group received various educational digital games which fitted information in units (12-13) of the English language course ""Emar English Series seventh grade ". The control group learned the same course content in the traditional method (i.e. without games).

7-2-Research Instruments

The researcher used the following instruments:

1. An achievement test (Pre, Post and Postponed-post).
2. Educational grammar digital games (Vocabulary Spelling City - Pictionary -Jeopardy – Painball- Fredisa Learns) games.

7-3- Variables of the research

- ▶ One independent variable was tested: Educational computer games.
- ▶ One dependent variable was tested: an English achievement test.

8-Operational Definitions of Terms

1. Effect:

It is defined according to the American Heritage Dictionary as "The power to produce an outcome or achieve a result; influence". "It is the result or consequence which is produced by a cause or an action "or "The ability to bring about results" (2011, p. 33). The researcher defines the effect in as a form of reactivity whereby students improve their achievement in English being experimentally measured simply in response to learning through digital games. This means the change in the learners' achievement level in English that may result from using digital games.

2. Educational digital Games:

According to Prensky (2001) digital game is any game that is mediated by an electronic form - a PC, a console, a cell phone, etc. and involving one or more players, with rules, goals, outcomes and feedback, competition, challenge, interaction, and story as key characteristics. The researcher defines them as serious games designed with educational purposes in order to teach students English four skills in units twelve and thirteen of the English language course ""Emar English Series seventh grade ".

3. English achievement.

Achievement refers to the completion and attainment of a certain level that a student can achieve after a series of education or training (Lamas, 2015)

It is the success of students in the English course which is measured by applying a test designed by the researcher. A higher score on the English achievement test implies a higher English learning achievement.

4. Retention:

For Tate, (2004) students' retention refers to the ability to recall the information learned in the classroom (p.11). The researcher defines it as the ability to acquire information and keep them for a long time, then recall them again after two weeks in other situations, to be used in contexts.

5. Seventh Grade Students:

They are the students who study in the seventh grade in Layeek School.

9- Literature Review:

The researcher reviewed some of the published articles, theses, dissertations and conference proceedings relating to using educational digital games in teaching and learning EFL for students. The researcher reviewed literature in a chronological order starting with the oldest studies and ending with the up-to date ones.

Thomas, (2005):

Fun with Fundamentals: Games and Electronic Activities to Reinforce Grammar in the College Writing Classroom

This study was based on games and electronic activities designed for college students to reinforce grammar in the College Writing classroom. Several types of games were used to help the students master grammar. The games include bingo set, Gramma' gories, parts of speech poker, scribble and sentence trivia. The researchers believed that providing the combination of games provides a friendly and cooperative surrounding among the students in mastering the grammatical concepts. Furthermore, the relaxed atmosphere in mastering the grammatical structures via games put less pressure on the students. When there is less pressure, this will indirectly help them to get the grasp of the grammatical concept. The researcher believed that providing the combination of games provides a friendly and cooperative surrounding among the students in mastering the grammatical concepts.

Musilova, (2010):

Grammar Games in ELT

This research was carried out using a single game to teach grammar. The study was meant for the 5th grade pupils of English in Czech Republic by using the lost treasure game. In this game, in order to find the hidden treasure, the students have to solve grammatical exercises throughout the process. Some of the grammatical exercises involve introducing stories, learning new vocabularies, completing definite and indefinite articles, practicing irregular and regular nouns as well as practicing the verbs (to be, to have got) and using the possessive adjectives.

The outcomes of the study show that the students found the game interesting and were highly motivated to solve the grammatical exercises. The study showed that the use of the hidden treasure exposes the students to different grammatical elements in one activity. Besides, it is indeed a fun and meaningful way to encourage the students to master the grammar rules.

Jalali & Dousti, (2012):

Vocabulary and grammar gain through computer educational games

This study investigated the effect of computer educational games on Iranian elementary learners' grammar and vocabulary gain. A total of 58 female, who were selected out of 80 elementary institute EFL learners participated in the study. The sample consisted of two groups: the experimental and control groups. The study followed a quasi- experimental pre- and post test design. In order to compare the results of their performance, an independent samples t- test was conducted. In comparing the pre- test and post- test scores, the results demonstrated no significant differences between the experimental and control groups.

However, the involvement of all learners, their enthusiasm to use the new technology in language learning and their positive attitudes toward learning were apparent in the experimental group. The presence of such high motivation among the learners in experimental group could contribute to their active involvement in the process of learning. This implies that computers have a significant role in motivating learners' involvement in the learning process.

Al-Elaimat, (2013):

The Effect of Using Computer Games on Lower Basic Stage Students' Achievement in English at Al-Salt Schools

The purpose of this study was to investigate the effect of using computer games on the lower basic stage students achievement in learning English at Al-SALT Schools. The population of this study consisted of all lower basic stage students in AL-SALT schools during the scholastic year 2011-2012. However, the sample of this study consisted of 88 male and female third grade students divided into two groups. Experimental group used computer games, and control group used the traditional method. The instrument of the study was an achievement test that aimed at measuring students' performance. The independent variables were the teaching method, technique and the computer games. The dependent variable was the student's achievement in English.

The findings of the study revealed significant differences in the mean scores between the control and the experimental groups, students' performance of the experimental group was better than that of the control group.

Aprizal, Salam& Suhartono, (2014):

Correlation Between Playing Digital Game And Students English Learning Achievement.

The purpose of this research is to find out the correlation between playing digital game and students' English learning achievement for the eighth grade students of SMP Bawari Pontianak in Academic Year 2012 – 2013. This research involved 35 students of eighth grade (VIII B). This research was designed in the form of descriptive research therefore; the data of this research were obtained by administering the questionnaire and students' English learning achievement score taken from the English teacher's handbook. The questionnaire tested on 35 students with 25 questions. This research used Person Product Moment formula to see the correlation value. The result of analyzing data found that the correlation between playing digital game and their English learning achievement score were 0.86 which categorized by high correlation. The most dominant skill acquired is Reading skill. Based on the finding, it is found that there were 11 students got high level (above 70) deals with students' response score and the rest of them are below 70.

Abu anzeh & Hamdi, (2019).

The Effect of Instructional Electronic Games in the Development of Basic Arabic Language Skills among Second Grade Students in Jordan

The present study aimed to investigate the impact of instructional electronic games in the development of basic Arabic language skills (listening, speaking, reading, and writing) among the second grade students in Jordan. To achieve the purposes of the study the study use Quasi Experimental Design. The study sample consisted of (60) male and female students from second grade students who were studying in the Directorate of Salt schools, Two groups; experimental and control groups were randomly selected, so that the two groups formed, the experimental group studied using the electronic educational games, while the control group studied the usual way. The researcher developed an instrument for diagnosing the basic Arabic language skills (listening, speaking, reading, and writing). Two units were chosen from Arabic language book for Second Grade and also a group of electronic educational games were selected that achieve targeted learning outcomes.

After applying the experience and study tools, an appropriate statistical analysis of the data was conducted. The results of the study showed statistically significant differences between the means of scores of the students among experimental and control groups on listening, speaking and reading skills, which reflected the impact of the effectiveness of teaching with electronic educational games on listening, speaking and reading skills, while it did not show statistically significant differences among the means of scores of the students between experimental and control groups on the writing skill.

Nadeem, Oroszlányová & Farag, (2023):

Effect of Digital Game-Based Learning on Student Engagement and Motivation

This study examined the effect of digital game-based learning on student engagement and motivation levels and the gender differences in online learning settings. This study was conducted in two distinct phases. A game-based and traditional online quizzing tools were used to compare levels of engagement and motivation, as well as to assess the additional parameter of gender difference. During the first phase of the study, 276 male and female undergraduate students were recruited from Sophomore Seminar classes, and 101 participated in the survey, of which 83 were male and 18 were female. In the second phase, 126 participants were recruited, of which 107 (63 females and 44 males) participated in the anonymous feedback surveys. The results revealed that digital game-based learning has a more positive impact on student engagement and motivation compared to traditional online activities. The incorporation of a leaderboard as a gaming element in the study was found to positively impact the academic performance of certain students, but it could also demotivate some students. Furthermore, female students generally showed a slightly higher level of enjoyment toward the games compared to male students, but they did not prefer a comparison with other students as much as male students did. The favorable response from students toward digital game-based activities indicates that enhancing instruction with such activities will not only make learning an enjoyable experience for learners but also enhance their engagement.

Thabet, T.S.A. (2023)

The Effect of Using Educational Electronic Games Approach on Student's Delay Achievement in Fraction Math Course level 5 at Republic of Yemen

This study aimed to examine the impact of The Effect of using Educational Electronic Games Approach on delayed Achievement in fraction math on (Remembering , understanding , application) skills Course level 5 at Republic of Yemen. In this study, an experimental group of (30) students studying a course using Educational Electronic Games approach. The control group (30) students they studying a course traditional learning, instructional design approach was used. I have used the El- Gazzar Instructional Design Model (2002) since it was proved to be simple and efficient. The course was implemented using MOODLE-LMS. The students' achievement was examined between two groups. The research results proved that there is a significant increase in gain in delayed achievement in (remembering, understanding, application) skills. The Educational Electronic Games has achieved efficiency greater than traditional learning in remembering skill .Also, the Educational Electronic Games achieved efficiency greater than traditional learning in understanding skill, Also, the Educational Electronic Games achieved efficiency greater than traditional learning in application skill.

Obenza-T & Obenza, (2024).

Assessment of Educational Digital Game-Based Learning and Academic Performance of Grade Six Pupils

This study investigated the efficacy of Educational Digital Game Learning on the learners' academic performance, specifically in English concepts, using a quasi-experimental control group and descriptive design. Two classes of grade VI students were involved and labeled as the control and experimental group. During the study, the researcher used a validated test

instrument. The researcher also filmed how EDGBL was conducted in the classroom and recorded interviews with experienced students. Frequency counts, percentages, weighted mean, and t-tests for independent samples were used to investigate the aims and establish the results. The findings revealed that students who underwent Educational Digital Game-Based Learning had improved their academic performance in learning English concepts. It was also found that those students who were exposed to EDGBL developed more positive habits in learning English. In contrast, those exposed to the traditional method tended to misbehave and have a monotonous learning environment. Moreover, conducting EDGBL as a method requires teachers to have practical facilitating skills to maintain solid work coordination throughout the implementation of EDGBL.

10- The relation between the present study and the previous ones

Most of the above- mentioned studies emphasized the importance of using digital games in learning English vocabulary and grammar as in the studies of Jalali and Dousti (2012), Musilova (2010) and Thomas (2005). All the previous studies indicate that there is a strong relationship between digital games and their positive effect on students' achievement. However the major body of the previous studies relies on descriptive information provided by the learners as in the studies of Nadeem, Oroszlányová & Farag (2023) and Aprizal, Salamand Suhartono (2014). Although few focused on their direct impact on learners' achievement in English as in the study of Obenza-T and Obenza (2024), and Al-Elaimat (2013), no study investigated their effect on retention of information. The researcher benefited a lot from the above- mentioned studies in developing the instruments and providing the theoretical background. Furthermore, the researcher in the present study felt that it would be beneficial to have students play those games and complete activities outside the classroom environment at home.

11- Research Procedures

In order to examine the effect of digital games on seventh grade students' achievement in English, the researcher constructed the following tools: an achievement test and serious digital games (Vocabulary Spelling City - Pictionary -Jeopardy – Painball- Fredisa Learns) games.

11-1- The achievement test:

To measure students' achievement of what should have been taught, the researcher constructed an achievement test

11-1-1-The pilot study of the achievement test

The pilot study was conducted to test the validity and measure reliability of the achievement test, other than the research sample. The pilot study consisted of (20) students from Layeek School.

- Validity of the achievement test:

First, the test was evaluated by a number of referees in the field of education and teaching English who reviewed the test in relation to the constructed table of specifications, and most of them found that the items were suitable for seventh grade students. Thus the content validity was achieved. Second, the test was carried out on 22 /2/2024. The researcher tested the difficulty, the easiness (appendix 1) and the discrimination(appendix 2) of the test.

- Reliability of the achievement test:

The same test was applied on 3/ 3/2024 to calculate reliability of the test on the same students. The correlation coefficient of the two applications according to (Person) was (0.93). Also, the reliability by Alpha (α) was (0.78) which indicates that this tool was ready for application. The number of the achievement test questions is (43) and the final mark of the test is (50) (appendix 3).

11-1-2-Instructional games

The researcher used Vocabulary Spelling City, Pictionary, Jeopardy, Painball and Fredisa Learn games. These games were used by students in the **Computer lab** where students can access **Internet**. The researcher selected topics relate to sports, numbers and animals.

- **Validity of the games:**

A number of referees reviewed the games and asked the researcher to clarify the procedures of implementing each game.

- **Reliability of the activities:**

The researcher applied the activities on (20) seventh grade students other than the sample. The application lasted for two weeks. During that time the researcher noticed the following:

- Most students liked playing games and enjoyed completing each task.
- Some activities took more time than was originally allowed. So, the researcher allowed students to play these digital games at home on their tablets or mobile phones.

11-2-The experimental study

Prior to beginning the experiment on 4/3 /2024, students in the experimental and control groups were tested at the same time to examine the equality of groups. An independent t-test was used to determine if there was a difference between students' means scores in the pre-test.

(table1): The difference between the mean scores of the experimental and control groups in the pre-test

The results in table (1): show that there is no statistical mean score difference between the

Group	Number	Mean	Std. Deviation	t	df	Sig	Decision
Experimental	30	10.4333	2.93238	0.618	85	0.539	Difference is not significant
Control	30	9.9667	2.91823				

experimental and control group in the pre-test. This indicates that the two chosen groups were equivalent and any difference between the students' results in the post-test after implementing the games can be contributed to using games.

After examining the equality of English knowledge level of the chosen groups and the validity and reliability of the research tool, the researcher carried out the experiment. The control group received traditional classroom instruction, whereas the experimental group learned English through educational digital games by the researcher.

Time period for applying lessons

Lessons	Date	period
Introductory lesson	4/3/2024	Fourth
Lesson 1	5/3/2024	Second
Lesson 2	6/3/2024	First
Lesson 4	7/3/2024	Second
Lesson 5	11/3/2024	First

An immediate post-test was administered on (12/3/2024) to participants in both groups. A couple of weeks after the immediate post-test, a postponed post-test was conducted on both groups on (25/3/2024). The aim of the postponed post-test was to investigate students' ability to retain information after two weeks of treatment.

12- Analysis of Results

This researcher answered the questions and tested hypotheses using the SPSS program (Statistical Package for the Social Sciences). Hypotheses were tested using (t-test) for independent groups. Additionally, the effect size and the percentage of retention were computed in order to estimate the practical significance of results. The (0.05) level of significance was adopted as the critical level of determining a significant difference.

The researcher calculated the effect size in both groups using Eta Squared (η^2) according to the following formula: ($\eta^2 = \frac{t^2}{t^2 + df}$) where,

η^2 = eta squared value

t^2 = value of (t-test)

df = degree of freedom (Hasan,2011,p.293).

The following criterion was used to interpret the relationship strength between the dependent and independent variable:

Table 15: Effect Size Criterion

Effect Size	η^2
small effect size	0.20- 0.49
medium effect size	0.50- 0.79
large effect size	above 0.80

(Abu Jarad, 2013,p.362)

12-1-Answering questions and testing hypotheses of the study

- What is the effect of educational digital games on seventh grade students' achievement in English?

To answer the question the researcher tested the following hypotheses:

1-There is no statistical significant mean scores difference between students in the experimental and control groups in the immediate post-test.

Table(2): Mean scores difference between students in the experimental and control groups in the immediate post-test.

Group	Number	Mean	Std. Deviation	t	df	Sig	Decision	Effect size
Experimental	30	15.70	3.896	5.00	58	0.00	Difference is significant	1.4
Control	30	11.00	3.352					
Null Hypothesis				Rejected				

Table(2) shows that the mean scores of the experimental and control groups are (15.70) and (11.00) respectively, and the calculated (t) value is (5.00) at (0. 00 < 0.05) level of significance. This means that there is a statistically mean score difference at ($\alpha = 0.05$) in the immediate post-test between the experimental and control group in favour of the experimental group with a high effect size (d= 1.4). This result points out that students who learned through games outperformed their counterparts who learned through the traditional method of teaching English, and using games was more effective than the traditional method of teaching. This result meets the studies of Jalali and Dousti (2012), Musilova (2010) and Thomas (2005).

2- There is no statistical significant mean scores difference between students in the experimental group in the immediate pre and post-test.

Table (3): Mean scores difference between students in the experimental group in the immediate pre and post-test.

Experimental Group	Number	Mean	Std. Deviation	t	df	Sig	Decision	Effect size
Pre-test	30	10.34	2.932	20.077	29	0.00	Difference is significant	1.8
Post-test	30	15.70	3.896					
Null Hypothesis				Rejected				

Table(3) shows that the mean scores of the experimental group in the immediate pre and post-test are (10.43) and (15.70) respectively, and the calculated (t) value is (20.077) at (0.00 < 0.05) level of significance. This means that there is a statistically mean score difference at ($\alpha = 0.05$) in the achievement of the experimental group in the immediate pre and post- test in favour of the post -test with a high effect size ($d= 1.8$). The researcher believes that this result may be due to the fact that students in the experimental group were motivated by watching animation on a computer screen and they were not aware that they were engaged seriously in learning English. These games enabled students to experience the learning content through realistic scenario simulations, stimulating their interest and motivation to learn.

- What is the effect of using the educational digital games in students’ retention of information?

To answer the question the researcher tested the following hypothesis:

- There is no statistically significant mean scores difference between students in the experimental and control groups in the postponed post- achievement test.

To test this hypothesis, the means and standard deviations of students’ scores in the postponed post- achievement test of the experimental and control groups were calculated. The (t-test) was used to identify the significance of the difference between the means of students’ scores in both groups, as table (4) shows.

Table 4: (t-test) of Means of Scores of Both Groups in the Postponed Post- Achievement Test

Postponed Post- Achievement Test							
Group	N	Mean	Std. Deviation	t value	df	Sig. Value	Decision
Experimental	30	14.73	1.639	28.108	58	0.000	Difference is significant
Control	30	10.50	1.225				
Null Hypothesis				Rejected			

Table (4) shows that the mean scores of the experimental and control groups are (14.73) and (10.50) respectively, and the computed (t) value for both groups is (28.108) at ($0.000 < 0.05$) level of significance. This means that a statistically significant difference at ($\alpha = 0.05$) exists in the postponed post- achievement test between the mean scores of the experimental and control groups in favour of the experimental group. This leads to rejecting the fourth hypothesis and retaining the alternative one that “There is a statistically significant mean scores difference between students in the experimental and control groups in the postponed post- achievement test”. This result indicates the fact that the educational digital games succeeded in improving the experimental group students’ ability of retention of information after two weeks of treatment. Using games smoothed their learning because the games captured their attention and motivated them. Instead of making students do a lot of homework in a threatening environment after class and repeating after the teacher all the time aimlessly, digital games encouraged the creativity and imagination of the learners because they were fun

and children liked to play them. So, they were able to retain information better than other students.

13- Discussion of the results

It is obvious from the previous results that the educational digital games are more effective than the traditional method of teaching in promoting students' English achievement; students in the experimental group improved their achievement better than the control group. Students who were taught through computer games were given more opportunities to practice the four skills (listening, speaking, reading and writing). At the same time students felt very happy while working on computers and they were highly motivated. Moreover, every student took his/her chance in practicing the games. The slow learners took their time to play and answer, while the fast students worked fast. At the same time, students felt more confident; they did not hesitate while answering the questions. It can be said that digital games have positive effects on the learning process. Using such games in the classroom facilitates the learning process of students and their cognitive achievement in English. The learning process becomes much more enjoyable and by engaging students in such games, the stress involved in the learning process is gradually reduced. Such games provide language practice in the various skills - speaking, writing, listening and reading. They encourage students to interact and communicate. They create a meaningful context for language use.

14- Conclusion

Digital games are important for learning English in two ways: First they are important because games are a very popular and widespread leisure time activity for the students. Second through educational games students inevitably acquire certain skills, knowledge and values. With digital games increasing in popularity to such a great extent, it would not be wise for education systems and teachers to ignore them.

15- Suggestions

Based on the results of this study, the researcher proposed the following suggestions:

1. Adopting the digital games more frequently by language teachers.
2. Providing specific training programs to prepare more teachers to use and design the educational digital games.
3. Continuing to assess the uses, benefits, and challenges of the digital games in class.
4. Conducting further experimental studies on the effectiveness of digital games on promoting higher-order thinking skills.
5. Conducting further experimental studies on other subjects and educational stages.

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