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The effect of using an educational program based on the use of electronic games on the acquisition of English language vocabulary for fourth-grade students in the schools of Karak Governorate in Jordan

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Abstract

This study aims to identify the effect of using an educational program based on the use of electronic games in acquiring English vocabulary for the performance of fourth-grade students in the schools of Karak Governorate in Jordan. The study sample consisted of (40) male and female students who were chosen randomly, distributed among the two groups, (20) male and female students for the control group, and (20) male and female students for the experimental group. The students in the experimental group were taught the educational content based on the student's book using an educational program based on the use of electronic games prepared by the researcher, while the control group was taught the same educational content but in the traditional way. The study tools consisted of a questionnaire to assess the needs, and a pre- and post-test showing the acquisition of English vocabulary. The program lasted five weeks, at a rate of two classes per week, during the first semester of the academic year 2020/2022. The data resulting from the application of the scale were statistically treated using the method of analysis of variance, and the extraction of means, and standard deviations. The results of the study indicated that there were significant differences between the performance averages of the two study groups on the post-English vocabulary acquisition scale according to the educational program, and that the difference was in favor of the experimental group members who were subjected to the educational program based on electronic games. The results also showed that there were no significant differences between the average performance of the study members on the post-English vocabulary acquisition scale, according to the gender variable. The study recommended the necessity of activating the teaching method using electronic games in the English language curricula for the fourth grade and the rest of the classrooms

Keywords: Electronic games, vocabulary acquisition, educational program

Introduction

Many learners see vocabulary learning as an important feature of language development, and language acquisition is primarily a matter of vocabulary learning. Therefore, they spend a great deal of time to memorize the word list and rely on the dictionary as the primary output for communication. Moreover, after a long period of preoccupation with developing grammatical competence, language teachers and applied linguistics researchers generally recognize the importance of vocabulary learning and are exploring ways to enhance it more effectively (Khenzy 2016). However, "vocabulary acquisition is not easy and can be done on paper. One of the things that students, teachers, and researchers agree on is that vocabulary acquisition is an essential part of second language learning. The term second language acquisition (SLA) takes place in multiple contexts. It includes both learning natural (on the street) and initially (the classroom).However, the best way to achieve vocabulary learning remains unclear, as it depends on a variety of factors (Schmitt, 2008).

Acquisition of language for children around the age of six does not seem to be a challenge, as they learn the language quickly. But they are also able to forget it easily. So children need to hear a lot of language, and the nature of the language they hear also matters to them. Where parents have to talk to their children and simplify what they say, and do not use complex sentences, or technical vocabulary, but use language appropriate to the situation, and adjust what they say to suit the age and situation of the child" (Harmer, 2007).

The use of traditional teaching methods poses a great challenge in learning and teaching English. Therefore, this task becomes difficult, especially if the learners are primary school students, and what distinguishes traditional methods of teaching is that the role of the teacher in the learning process occupies the largest space and the learner does not remain in the role The ease of this process, which makes their role passive by relying on teachers only to obtain information.

Traditional learning is not suitable for all learners. Each class includes students who learn quickly and may get bored with the traditional method of teaching, while there are slow learners in the same class who have trouble understanding the information they receive. Therefore, both types of learners are unable to satisfy their needs or obtain satisfaction (Sadker & Zittleman 2006).

The traditional method mainly depends on textbooks, the blackboard, paper and pens for teaching and learning, but the new methods depend on the practical materials approach, especially after the introduction of computers inside schools, and this helps students to develop and learn. This development has become tangible in the past 25 years, as new technologies such as computers and the Internet have emerged, in which many teachers have participated to contribute to the development of education. This undoubtedly makes the use of modern technology in the classroom very interesting for our students and enhances their learning Raulston (2009).

Teaching English through electronic programs is not easy if it is used in traditional ways of teaching, as the use of computers as other teaching aids or tools will not be able to achieve many benefits for students unless the real use of the computer is explored in a different and specific context in detail and applied in a way suitable. This means that using computers in the classroom may be an uneasy task and may not be effective in teaching and learning when introduced within traditional curricula (Warschauer & Kern 2000).

There are many different useful techniques for using modern technology in English language teaching. One such method is the use of educational computer games. In addition to helping students realize their own abilities, the use of educational computer games in EFL may help teachers improve and develop their own teaching methods. The use of educational computer games in EFL classes can have many advantages for both learners and teachers as it constitutes a pedagogical stimulus for students by making learning a foreign language more enjoyable and provides students with the motivation to practice language skills with their classmates in the classroom.

The use of technology in language teaching and learning is developing rapidly. The use of technology by the language education specialist, especially the use of computers in teaching, has been incorporated. Sundquist (2012) states that playing digital games or computer games such as multiplayer online role-playing games on a large scale enhances pupils' cognitive knowledge, which is useful for second language learning.

Playing computer games requires some skills to help students use computer programs and applications. It also requires some skills to help pupils deal with the information displayed on the screen. Incorporating computer games into class instruction can be challenging. This is due to challenges such as computer technical issues, teacher preparation, game perception, physical condition, teachers' background, class schedule, and computer support in our schools is very helpless and many students may have little knowledge of how to use mouse, keyboards or monitors (Nielsen, 2004).

Literature Review:

In this chapter, the researcher will review the theoretical literature of this study, by addressing the theoretical background of the topic under

study and studies related to the rules of learning based on electronic games.

First, the theoretical background

Vocabulary learning is a complex process that consists of remembering, understanding meaning and usage. This requires students to not only recognize, pronounce and understand the meaning but also use it flexibly in any situation. Some argue that we can distinguish between acquisition and learning, because learning is a direct process in which elements separate from language are studied and practiced in turn. Thus they suggested that the teacher focus on acquisition rather than learning, i.e. focus on the language that students understand even if it is slightly above their production level (li and Pan 2015)

According to Gayton, A. (2010), knowing a word includes form, meaning and usage, he made some points that include word knowledge:

1- Recognize it when you hear it.

2- Familiarity with its written form.

3- Recognize the effect of pasting on the use and meaning of the word.

4- Knowing the special meaning of the word in a particular context.

5- Know the words related to a particular word

Furthermore, Nation (2011) states that the word knowledge aspect includes:

1- Knowing the form of the word, including spelling, sound and word.

2 - Knowing the meaning of the word which includes linking its form and meaning, knowing the concept of the word and what it can refer to, and knowing other related words that can be linked to it.

3- Knowing how a word is used in relation to the grammar of the word, including the parts of speech and the patterns of sentences that they fit, the consideration of words, whether the word is formal or informal, polite or impolite, used primarily by children and so on, or not It has restrictions on its use

One of the classifications of vocabulary learning strategies is the Oxford (2011) model of the components of strategies, which is a model inspired by many learning theories, especially the social and cultural theory of Vygotsky, 1978. This model focuses on how learners use strategies to organize their language learning, and describes what strategies Metacognitive that directs behavioral strategies, including: metacognitive strategies (to guide the use of cognitive strategies such as situation analysis); Meta-emotional strategies (to regulate strategies related to emotion, attitudes, and motivation; and Interactive meta-cultural strategies (to govern strategies for how learners interact or communicate with each other, and how they deal with social and cultural diversity).

As a matter of interest in acquiring vocabulary, many educational institutions have begun to apply new types to meet the needs of learners in this context, such as the use of electronic means in education. As the increased use of computers in education and especially educational computer games in the learning environment can be of great value and effectiveness.

Another side of educators believes that the use of technology changes the role of the learner in the classroom and turns from a recipient of knowledge to a researcher and explorer. Jordan (2008)

In contrast, Eck (2007) points out that game-based learning can provide a rich learning context to help learners form high-level knowledge through many challenging trial and error possibilities. In addition, one of the key components of successful learning is game-based learning. Thus game-based learning is 'learning through the game', rather than 'learning to play the game'.

According to Peterson (2016), educational computer games develop learners' skills in classification, analysis, observation, inference, and synthesis. He adds that digital game-based learning helps learners engage, motivate, provide hands-on experience, and offer traditional learning experiences while stimulating long-term memory.

Griffiths (2002) asserts that video or digital games are an essential tool for completing educational tasks. Digital games have great diversity, attract learners from multiple demographic backgrounds (eg age, gender,

ethnicity, educational status) and help students work individually, in pairs, or in small groups.

When talking about the characteristics of computer games, Ackerman (2011) states that playing is the preferred way for our brains to learn things. To play has fixed rules and direction and has no substance, benefit or profit and encourages the arrangement of social gatherings. It is a non-compulsory activity, has its own time and place, and is not specified in its results. It is controlled by rules and has both imaginary and unrealistic elements.

Hillis (2016) emphasizes that play has important aspects such as having deep biological and evolutionary functions suitable for learning. Thus play is natural or expected in the nature of any child because play has the fundamental effectiveness of games as an educational tool.

According to Carnegie (2017), players rarely succeed unless they enjoy what they are doing. Having fun is a very important part of the learning process while learning new tools as the learner is enthusiastic, relaxed and therefore more motivated to learn.

However, playing games as educational tools differs from other types of play because they have achievable goals. A player cannot be motivated if there is no goal he wants to achieve. In the game, achieving your goals is a big part of what motivates you, the goal is to get the highest score and if the game has no goals or achievable progress, the player will get bored. Wright (2005)

According to Juul (2005), there are some points that teachers should consider when choosing educational games, as follows:

-Students' age, gender, characteristics, previous gaming experience, and competitiveness.

-Target age level for games.

-Students with special needs.

-Number of Players.

-Gender, ethnic diversity, student language and choice of characters in the game.

-The role of the teacher while playing the games, whether he is a passive observer or an active participant.

Prensky (2006) confirms that there are a set of advantages to using electronic games as follows:

-Electronic games are more suitable for boring tasks.

Digital games offer more fun and interesting things that non-electronic games can't.

-Electronic games are faster and more representative.

-Electronic games can provide a more diverse and better visual representation.

-Electronic games can be played against other players or against the computer and allow for multiplayer games.

-Electronic games can produce many options and scenarios.

-Electronic games can handle an infinite amount of content.

-Anyone connected to the internet anywhere can play as a potential player.

-Electronic games can be updated automatically.

-Players can play electronic games on different levels of challenges.

-Learning tasks can be boring but computer games are so fun that students don't realize they are learning while playing.

-Electronic games help students develop their abilities and skills while using technology.

-They can learn through different senses such as hearing and sight so that they can learn better.

-Students can choose when they learn.

On the other hand, Adams (2017) lists a number of defects in playing electronic games, as follows:

-Students can become addicted, as children simply feel addicted to electronic games and this may cause some bad outcomes such as back and neck pain, fatigue and eyestrain.

-Computer games can affect the mind of children, as they can play until they make progress or win the game. This causes low self-

esteem and violent behavior due to losing the game

-Electronic games in general play a major role in wasting time. This affects students' performance of their homework, studying, or participation in social events.

Second: Previous studies:

The topic of using learning based on electronic games has received great attention, as there has been numerous research and studies dealing with this topic, and the following is a presentation of the studies that the researcher has been able to obtain.

Sobhani & Bagheri (2014) conducted a study to investigate the attitudes of students and teachers on the effectiveness of the use of games and recreational activities in relation to English language learning. The researchers designed a questionnaire in which forty students and teachers participated. After analyzing the statistical data, it was found that both groups had positive attitudes towards games and recreational activities.

Tessem (2012) conducted a study examining the role of visual materials in teaching English vocabulary such as pictures, flashcards, graph games, and real objects. Data were collected with four study tools which are questionnaires, observation, and interview and document analysis. The result of the study showed that teachers rarely use visual materials such as real objects, cards, graphs, etc., in teaching the meaning of words. On the other hand, the majority of teachers and respondents answered that visual materials frequently reinforce students' vocabulary learning. According to the answers obtained from teachers and students through open-ended questions, students were eager to learn vocabulary with the help of visual materials. Furthermore, learning vocabulary through visual materials helps students communicate effectively through language. They added that displaying visual materials gives students opportunities to express their thoughts and feelings through language.

Konomi (2014) conducted a study examining the use of visual materials such as pictures, posters, postcards, word calendars, realism, charts, charts, organizer, photos, books, television, videos from I Tunes and computers to help young learners learn vocabulary. Data collected from the three research tools; Questionnaires, interviews and observation papers have shown that the use of visual aids in teaching vocabulary is very beneficial. Because the use of visual aids can help learners understand the deep meaning of a topic and realize the similarities and differences between each topic.

Djahimo (2018) conducted a study examining the effect of games and pictures in teaching English as a foreign language, especially in teaching English vocabulary. Data were collected from three instruments, interview, observation and test. The results of the study revealed that both teachers and learners were interested in the learning process using games and images that were really beneficial to both. The study showed that the students enjoyed learning the English language using games and pictures. The students showed signs of positive changes in the classroom atmosphere that occurred when they used the games and pictures. Thus, they showed their enthusiasm and interest in the subject matter and the learning process. They gave positive feedback on all activities

Almekhalfi (2012) conducted a study to investigate the effectiveness of computer-assisted language learning (CALL) on the achievement and attitude of school students in the United Arab Emirates as a foreign language (EFL) in the United Arab Emirates. The study was conducted on 83 primary and middle school students. They were studying English as a foreign language in the 2003-2004 academic year. These students were randomly selected. Additionally, a questionnaire was conducted to find out their attitude and intent to use CALL in the future. The students in the experimental group had a positive attitude towards CALL and had a strong intent to use it in the future. The results of the analysis of variance (ANOVA) showed a statistically significant difference between CALL users and non-users in favor of the experimental group.

Altjok and Baser (2018) conducted a study to investigate the effectiveness of using game-based language learning using Kinect technology on students' beliefs about self-efficacy and their attitudes toward English. The study used a quasi-experimental design before the post-test. Participants are first-year students

enrolled in a foreign language course at a university in Turkey. In this study, the tools included two questionnaires and an attitude scale. SPSS Statistics 23.0 software was used for statistical analysis of quantitative data. The results showed that there was a statistically significant difference in the attitude and self-efficacy on the scores of the students in the experimental group with respect to the average scores of the students in the control group.

Cam & Tran (2017) conducted a study to investigate the effect of the use of games in teaching grammar for English language majors. The number of participants was (25) students. The researchers designed a questionnaire to investigate students' reactions, attitudes, and opinions toward grammar games. The data collected from the interview indicated that 84% of the students had a positive attitude towards English language games. The results showed that it is recommended to use games by teachers of English classes. The researchers recommended choosing activities that suit all types of learning and the various things that teachers want the learners to do

Pathan & Aldersi (2014) conducted a study to find out the effectiveness of using games to teach grammar to primary school pupils as an easily usable technique. The study was conducted in two primary schools. The participants in the study were fifty students from the selected schools. Data were collected during observation and preliminary testing. The results of the experiment using games and the post-test showed that teaching grammar through the use of games can be an effective method of teaching a foreign language. Based on the results of the study, the researchers recommended that grammar games be a part of grammar teaching activities and techniques among EFL teachers.

Commentry on previous studies:

It is clear from the previous presentation of the previous studies that:

The use of games can be an effective method of teaching a foreign language

Students have a positive attitude towards English games.

The study Problem

The problem of the current study was manifested in the need of the fourth grade students to enhance their acquisition of English vocabulary, as the results obtained from the questionnaire and achievement test showed that their English vocabulary needs to be developed. And then this study examined the effect of using an educational program based on the use of electronic games in acquiring those vocabularies.

The study Questions

Based on the problem of the current study, the study will attempt to specifically answer the following questions:

Are there statistically significant differences at the level of significance ($\alpha<0.05$) between the average scores obtained by the experimental group and the control groups in the post-achievement test due to the educational program based on the use of electronic games?

Are there statistically significant differences at the level of significance ($\alpha<0.05$) between the average scores obtained by the experimental group and the control groups in the post-achievement test due to the gender variable (male, female)?

The importance of study

The importance of the current study lies in the following theoretical and practical points:

Theoretical importance:

Providing theoretical literature that can be consulted by researchers and scholars, and thus the data contained in this study is the outcome of the Arab Library.

The current study is a modest response to what specialists call for the necessity of using a variety of educational programs to acquire foreign language vocabulary.

Practical importance:

This study attempted to add a new background to studies related to teaching

English as a foreign language by highlighting the use of electronic games in acquiring vocabulary. Thus it is important for both the student and the teacher.

For the student:

-Creating a rich cognitive environment to motivate the student to form positive attitudes towards learning English as a foreign language.

-Helping students to demonstrate and build positive attitudes towards learning English and enhance their language achievement.

-Enable the student to enjoy learning English vocabulary using electronic games and thus not to feel bored in the classroom.

-Helping pupils to become more self-reliant while learning new aspects of the language.

For the teacher

-Emphasizin the role of the teacher as a facilitator.

-Helping them realize the use of modern techniques and strategies in teaching English.

-Using new tools for teaching English in the classroom.

-Creating an environment full of enthusiasm and encouragement.

Objectives of the study

The current study aims to:

-Building an educational program based on the use of electronic games in acquiring English vocabulary.

-implementing an educational program based on the use of electronic games in the acquisition of English vocabulary

- identifying the effect of using an educational program based on the use of electronic games in acquiring English language vocabulary for fourth-grade students in Karak Governorate based on the gender variable

Terms of the study

Electronic games: Electronic games are defined as a type of play that is designed according to controls and the goal behind it is entertainment with a clear educational goal that has rules, a goal and an element of fun, and the concept of electronic games refers to two types of games, video games that are played on support games and games played on the computer. Gee (2005)

Procedural definition: The researcher can define electronic games as electronic media that are designed to teach students vocabulary, provided that they possess the full characteristics of the educational games environment that helps them develop the skills of acquiring those vocabularies.

Educational attainment: Educational attainment can be described as acquired mastery in basic skills and content knowledge, and also refers to what students have learned or developed skills and is usually measured through assessments such as tests and assessments Dorgam R. (2007).

Procedural definition: The researcher can define educational achievement as the students' performance, marks, or results related to the vocabulary they learned in the training program.

Vocabulary: "words that are used specifically in a language or a particular field of activity" (Concise Oxford English Dictionary, 2008).

Procedural definition: The researcher adopted this definition in the current study in proportion to its nature.

Acquisition: word knowledge, i.e. the learner's ability to recognize, pronounce, understand, memorize and spell words well. He will be able to use or produce it in class and in real life (Shaath, 2015).

Procedural definition: The researcher can define vocabulary acquisition as the learner's ability to acquire a set of linguistic vocabulary in any language, memorize it and master its meaning and pronunciation.

The limits of the study

This study is limited to three main limits:

Human limits: limited to fourth grade students who are in schools in the Karak governorate who are officially registered in the Education Directorate of the Qasr Brigade of the Jordanian

Ministry of Education for the academic year (2021/2022).

Time limits: limited to the first semester of the 2021/2022 school year.

Spatial limits: limited to Al-Qasr Brigade / Karak Governorate in particular.

Study Methodology: The current study used the quasi-experimental method, in order to find out the effect of the independent variables represented by an "educational program based on the use of electronic games" and the variable "student gender" on the dependent variable, which is "acquisition of English vocabulary" among the fourth class students in the schools of the Karak governorate.

Study Population: The population of the current study consisted of all (fourth grade) students enrolled in schools affiliated with the Jordanian Ministry of Education for the academic year (2021/2022). The number of (540) male and female students are officially registered with the Directorate of Education for the Qasr Brigade of the Jordanian Ministry of Education, and their ages range between (10-11) years.

Study sample: The current study sample consisted of (the study sample consisted of (40) male and female students who were randomly selected, distributed into the two groups, (20) male and female students for the control group, distributed into (12) male and students, and (8) female students, and another experimental group whose members were (20) male and female students divided into (12) male students, and (8) female students, as shown in Table (1).

Table (1)

Distribution of the study sample by gender

(n = 40)

gender		**group**
Female	Male	
8	12	**Control**
8	12	**Experimental**

Instruments of the study:

To achieve the objectives of the study, the following Instruments were used:

- English vocabulary assessment test (Pre and Post)

An achievement test (three units "1, 2 and 3") was developed from the first semester in the fourth grade of the "English Language" book to investigate the effect of an educational program based on the use of electronic games on students' acquisition of English language vocabulary. It was used as a preliminary test for both groups (experimental and control) The purpose of the test is to measure the achievement of fourth grade students in vocabulary of English as a foreign language after applying the proposed educational program.

In the process of developing the achievement test, the researcher designed a test that suits the level of the fourth grade students. The test consists of 5 items that were measured (the meaning of the words, the opposite of the meaning, the type of the word, a verb, a noun or an adjective) and were identified as suitable for primary school pupils.

The following guidelines have been taken into account when assigning test items in order to determine the cut-off score (acceptable level of performance). The researcher relied on the views and suggestions of the jury members in

the field of curricula and teaching methods (methods of teaching English as a foreign language). All members of the jury agreed to reduce the score of 60% as an acceptable external performance level for the achievement test. Then the researcher calculated the average amount of time it took to answer the test.

The test was validated through the use of content validity done by members of the jury who were asked to give their opinions regarding: the suitability of the items to the level of the pupils, the clarity of the instructions and questions and whether they measure the intended lessons. Based on the recommendations of the jury members, some changes were made to the test. Question 8 was omitted because the educational objective of this question type was not one of the specific objectives included in the test. The final form of the test became 7 questions, and some modifications were made to questions 4 and 6. To ensure its reliability, and before its application, the test was conducted on an experimental group of 20 students at Al Qasr Basic School. The researcher used Cronbach's alpha coefficient to calculate the reliability where the value of the reliability coefficient for each question and the total value of the test ranged between (0.84, 0.93). The reliability value was statistically acceptable and proven, which confirmed the reliability of this.

-Educational program based on the use of electronic games in acquisition of English vocabulary

The researcher prepared an educational program based on the use of electronic games to see its impact on the acquisition of English language vocabulary for fourth-grade students in the schools of Karak Governorate in Jordan. The electronic games that were used in this program were designed by a computer programmer. The program included units of a book for students and a guide for the teacher, which included some vocabulary. The computer games were collected by the researcher and designed by the programmer. The computer games included some activities in each lesson to enhance the students' knowledge of English vocabulary. The program was then presented to a group of arbitrators to ensure its suitability for the students, and the amendments were made according to the arbitrators' opinions. The program was implemented over 10 teaching sessions, at a rate of two lessons per week, and the duration of one session is (45) minutes.

Variables of the Study:

Independent variable: educational program based on using electronic games.

Intermediate Variables: Student's gender, male, female

Dependent variables include: Acquisition of English vocabulary

Statistical processing:

After completing the data collection by applying the tools and extracting validity and reliability, the statistical packages for the social sciences program were relied upon in the statistical analysis of the study data.

To answer the study questions, the following statistical treatments were used:

-Arithmetic means and standard deviations of the performance of the two study groups in the pre and post test.

-The accompanying analysis of variance (ANCOVA) to answer the first question of the study.

-Tow way ANCOVA to answer the second study question.

The following are the results of the study based on its questions:

First: the results related to the first question: Are there statistically significant differences at the level of significance (α 0.05) between the mean scores obtained by the experimental group and the control groups in the post-achievement test due to the educational program based on the use of electronic games?

The arithmetic means and standard deviations of the scores of the sample members were calculated according to the achievement test between the experimental group and the control group, and Table (2) shows this.

Table (2)

Arithmetic means and standard deviations of the scores of the study participants in the achievement test between the experimental group and the control group according to the educational program

(n = 40)

Post test		Pre test		N	groups
S.D	Mean	S.D	Mean		
26.08	120.20	14.13	42.00	20	Experimental
13.48	55.90	16.28	39.40	20	Control
38.47	88.05	15.10	40.70	40	Total

It is noted from Table (2) that the arithmetic mean of the scores of the study members in the achievement test according to the educational program in the experimental group reached (120.20), which is higher than the arithmetic mean of the performance of the study members in the control group, which amounted to (55.90), and to see if the differences between the Arithmetic mean is significant at the level of significance ($\alpha \leq 0.05$) ,an associated analysis of variance (ANCOVA) was performed, and Table (3) shows the results of the analysis.

Table (3)

The results of the associated analysis of variance (ANCOVA) for the scores of the study subjects in the test according to the educational program (n = 40)

Sig	**F value**	**Means of squares**	**D.F**	**Squares sum**	**sourceVariance**
0.734	0.118	51.894	1	51.894	application of the -The pre achievement test
0.000*	92.441	40776.637	1	40776.637	the educational program
		441.111	37	16321.106	Error
			39	57717.9	Total

The difference is statistically significant.

It is noted from Table (3) that the value of (F) for the educational program on the test amounted to (92,441), with a level of significance (0.000), which indicates that there are statistically significant differences between the performances means of the two study groups on the post-test. In order to know the difference in favor of any group, the arithmetic means adjusted for the performance of the two study groups on the post-test were extracted, and Table (4) shows those means.

Table (4)

The modified arithmetic means and standard errors of the study members' performance on the test according to the training program

(n = 40)

rrorE tandardS	Mean	groups
4.71	120.10	Experimental
4.71	56.00	Control

Table (4) indicates that the arithmetic mean of the scores of the experimental group on the test according to the educational program was the highest, reaching (120.10), while the arithmetic mean of the members of the control group was (56.00), and this means that the difference was in favor of the members of the experimental group, as evidenced by the increase in their arithmetic mean from The arithmetic mean of the control group.

Second: The results related to the second question: Are there statistically significant differences at the level of significance (α 0.05) between the mean scores obtained by the experimental group and the control groups in the post-achievement test due to the gender variable (male, female)?

The arithmetic means and standard deviations of the scores in the test between the experimental group and the control group were calculated according to the gender of the student, and Table (5) shows that.

Table (5)

Arithmetic means and standard deviations of the scores of the study participants in the achievement test between the experimental group and the control group according to the gender of the student

(n = 40)

Post test		**Pre test**		**N**	**gender**	**groups**	**Skills**
S.D	**Mean**	**S.D**	**Mean**				
27.54	120.08	15.66	47.92	12	Males	Experimental	nglishE vocabulary
25.57	120.38	2.59	33.13	8	Females		
26.08	120.20	14.13	42.00	20	Total		
12.66	50.17	17.31	39.67	12	Males	Control	
10.03	64.50	15.75	39.00	8	Females		
13.48	55.90	16.28	39.40	20	Total		

41.41	85.13	16.68	43.79	24	Males	Total	
34.42	92.44	11.32	36.06	16	Females		
38.47	88.05	15.10	40.70	40	Total		

It is noted from Table (5) that the arithmetic mean of the scores of the study participants in the test according to the educational program in the experimental group amounted to (120.20), which is higher than the arithmetic mean of the performance of the study members in the control group, which amounted to (55.90), and the arithmetic mean of the performance of the study members from The females reached (92.44), while the arithmetic mean for males was (85.13), and to find out whether the differences between the arithmetic means were significant at the significance level ($\alpha \leq 0.05$), the associated binary analysis of variance (ANCOVA) was performed, and Table (6)) shows the results of the analysis.

Table (6)

The results of the associated two-way analysis of variance (ANCOVA) for the performance of the study subjects in the test according to the program

(n = 40)

Sig	F value	Means of squares	D.F	Squares sum	SourceVariance	Skills
0.689	0.162	71.080	1	71.080	of application-pre vocabulary English test	nglish vocabularyE
0.000*	24.386	735.37773	1	735.37773	The program	
0.258	1.325	579.588	1	579.588	gender	
0.368	0.832	364.125	1	364.125	gender *program The	
		437.582	35	15315.379	Error	
			39	.957717	Total	

It is noted from the previous table that the value of (F) for the interaction between the training program and gender on the English vocabulary scale amounted to (0.832), and at a significance level (0.368), which indicates that there are no statistically significant differences between the performance averages of the two study groups of males and females in the two groups. Experimental and control on the English language vocabulary scale. The value of (F) for the gender variable on the English vocabulary scale was (1.325), and the level of significance was (0.258), which indicates that there are no statistically significant differences between the performance averages of the two study groups of males and females on the English vocabulary scale after.

Discussion the study results and recommendations

The following is a discussion of the results of the study based on its questions:

First: The results related to the first question: Are there statistically significant differences at the level of significance ($\alpha \leq 0.05$) between the experimental and control groups on the English vocabulary acquisition scale due to the program?

The results of the statistical analysis showed that there were statistically significant differences between the performance averages of the two study groups on the English language vocabulary scale according to the educational program based on electronic games, and that the difference was in favor of the experimental group members who were subjected to the educational program, as evidenced by the higher mean of their arithmetic than the arithmetic mean of the control group. This means that the educational program was effective in acquiring English language vocabulary for a sample of fourth-grade students in Karak governorate.

This result may be attributed to the fact that acquiring English vocabulary using the educational program based on electronic games was effective in attracting students' attention, enhancing their attitude and understanding the meaning of the new vocabulary. This is consistent with the different learning styles of the pupils. Thus, each student had the opportunity to practice his ideas and benefit from his information. As a result, students become active participants, which improves their acquisition and learning of vocabulary.

Second: The results related to the second question: Are there statistically significant differences at the level of significance ($\alpha \leq 0.05$) between the experimental and control groups on the English vocabulary acquisition scale due to the gender variable?

There are no statistically significant differences between the performance averages of the two study groups of males and females in the experimental and control groups on the post-English vocabulary acquisition scale depending on the gender variable. Thus, this educational program affected the students to the same degree, whether they were males or females, and this made the gender variable a neutral variable.

This is due to the fact that males and females were exposed to the same educational opportunities, and that the impact of the educational program is appropriate for both sexes. This means that the educational program based on electronic games can be used for both genders.

Recommendations

In light of the results of the current study, the researcher recommends the following:

-Activating the method of teaching using electronic games in the English language curricula for the fourth grade and the rest of the classrooms

-Training English language teachers for the fourth grade and the rest of the grades on the production of electronic games by transcribing the content of the material electronically

-Expanding studies similar to this study in other academic subjects and for other academic stages

Referances

[1] Abdel-Hadi, Nabil, (2004), The psychology of play and its impact on children's learning. Amman, Dar Wael for publishing and distribution

[2] Almekhalfi, A. G., & Tibi, S. (2012). The use of Assistive Technology for people with special needs in the UAE. *Journal of the International Special Needs Education, 15*(1), 56-71.

[3] Adams, C. c. i., Dimitra, K., Konstantinos, K., Christina, Z., & Katerina, T. (2020). Types of Game-Based Learning in Education: A Brief State of the Art and the Implementation in Greece. *European Educational Researcher, 3*(2), 87-100.

[4] Atkins, B. (2003). *More than a game: The computer game as fictional form*: Manchester University Press.

[5] Available at http://www.ehow.com/info_8187768_advantages_disadvatages_traditional-education.html.

[6] Al-Heila, Muhammad (2005), Educational games and their production techniques, Amman, Dar Al-Masirah for Publishing and Distribution

[7] Al-Anani, Hanan, (2002), Playing in Children Theoretical and Applied Foundations, Amman Dar Al-Fikr for Printing and Publishing

[8] Almawadeh, Nofah Sameh and Khalifa, Ghazi Jamal (2016). The Philosophical Beliefs of English Language Teachers of the Primary Stage and Their Relationship to Their Teaching Practices in the Jordan Palace Brigade. Mutah for Research and Studies - Human and Social Sciences Series: Mutah University Volume 31

[9] Al Moadih, Nofah Samih , (2018) The effectiveness of Using Concepts Maps strategies in the development of reading and writing skills in English among the basic education students in Jordan , journals.ekb.eg article_102170 Volume 18, , October 2018, Page 23-49

[10] Cam, L., & Tran, T. M. T. (2017). An evaluation of using games in teaching English grammar for first year English-majored students at Dong Nai Technology University. *International journal of learning, teaching and educational Research*, *16*(7), 55-71.

[11] Fathi, Naglaa (2010), Educational digital games, Cairo, Arab Thought House

[12] Pathan, M. M., &Aldersi. MEZ (2014). Using Games in Primary Schools for effective Grammar Teaching. *International Journal of English Language and Translation Studies, 2*(2), 211-227.

[13] Yükseltürk, E. A., Serhat Başer, Zeynep. (2018). Using game-based learning with kinect technology in Foreign Language education course,Educational Technology and Society. *21*.

[14] Djahimo.S.(2018).The Power of Games and Pictures in Teaching EFL Class.Nusacendana University, kupang.NTT,Indonesia, The Asian EFL Journal Vol.20 ,Issue 2.

[15] Dorgam R. (2007**)** the effectiveness of "portfolios" on developing English vocabulary for non-English majors M.A the faculty of education. Al- Arish University.

[16] Egenfeldt-Nielsen, S. (2004). Practical barriers in using educational computer games. *On the Horizon, 12*(1), 18-21.

[17] Fagen, R. c. i. P., Marc. (2001). Fun, play and games: What makes games engaging. *Digital game-based learning, 5*(1), 5-31.

[18] Gayton, A.(2010).socioeconomic status and Language Learning Motivation:To what extent does the former influence the latter?Scottish Language Review Issue,22,17-28.

[19] Gee, J. P. (2005). Learning by design: Good video games as learning machines. *E-learning and Digital Media, 2*(1), 5-16.

[20] Gee, J. P. (2008). Playing to learn game design skills in a game context.

[21] *GEMA Online® Journal of Language Studies*

[22] Gorder, L. M. (2008). A study of teacher perceptions of instructional technology integration in the classroom. *Delta Pi Epsilon Journal, 50*(2).

[23] Harmer,C.,Lawrence,F.&Miccio A.(2007)Bilingual children's language abilities as early reading outcomes in Head start and kindergarten. Language, speech, and Hearing services in schools, 38,237-248.

[24] Hillis, V. (2016). Cultural group selection plays an essential role in explaining human cooperation: A sketch of the evidence. *Behavioral and Brain Sciences, 39*.

[25] Hong, B., Nedomová, Jalali, Sara. (2002,2003; 2007,2012). Vocabulary and grammar gain through computer educational games

[26] Khalil, Azza (2002), The Psychology of Play in Childhood, Amman, Arab Thought House for Publishing.

[27] Khenzy,E.(2016).Using an Educational Strategy based on Pictorial Reading for Enhancing English Vocabulary Learning among Primary Stage Pupils. M.A.Thesis Faculty of Graduate Studies for Education, Cairo University.

[28] Konomi, D.(2014).Using Vocabulary Materials in Teaching Vocabulary in English as a Foreign Language Classroom with Young Learners. Paper presented at the international conference:New perspective in Science and Education, Pp.254-259.

[29] Li, G.&Pan,H.(2015).An Action Research on Effective Vocabulary Teaching. International Journal of science Commerce and Humanities, Vol.No.1,Pp.80-94.

[30] Marei, Tawfiq and Al-Hela, Muhammad (2002). Public Fires, Dar Al-Masira for Publishing, Distribution and Printing, Amman, Jordan.

[31] Masgoret, A.,& Gardner, R.(2003) Attitudes, motivation, and second language learning: Ameta- analysis of studies conducted by Gardner and associates. Language learning, 53-123-163.

[32] Mubaslat, M. M. (2012). The Effect of Using Educational Games on the Students' Achievement in English Language for the Primary Stage. *Online Submission*.

[33] Nation, I.(2011).Research into practice:Vocabulary. Language Teaching, 44(4),529-539.

[34] Sadker DM & Zittleman K., M., Nima Shakouri, & Jooneghani, R. B. (,2006,2012). Classroom interaction: betting a utopia! *International Journal of Academic Research, 4*(4), 32-36.

[35] Sarhan, Eid (1994), The Role of Educational Games in Teaching and Learning English, Teacher's Message Journal, 35, 3

[36] Schmitt,N.(2008).Review article instructed second language vocabulary learning. Language Teaching Research, Vol.12,No.3,Pp.329-363

[37] Shaath, A .(2015). A suggested program based on self-regulated strategy development for developing English language functional writing skills of students at Al-Azhar University - Gaza. [Unpublished Doctoral dissertation] Dep. of Curriculum and Instruction, Faculty of Women Ain Shams University.

[38] Sundquist, D., Daniel Hobson. (, 2012,2014). *Leveling up language proficiency through massive multiplayer online role playing games: Opportunities for English learners to receive input, modify output, negotiate meaning, and employ language-learning strategies*: The University of Utah

[39] Peterson, M. (2016). The use of massively multiplayer online role-playing games in CALL: An analysis of research. *Computer Assisted Language Learning, 29*(7), 1181-1194.

[40] Prensky, M. (2007). How to teach with technology: Keeping both teachers and students comfortable in an era of exponential change. *Emerging technologies for learning, 2*(4), 40-46.

[41] Raulston, C. G. (2009). *Analyses of teachers' perceptions and attitudes of a teacher laptop initiative.* University of Alabama Libraries.

[42] Van Eck, R. (2006). Digital game-based learning: It's not just the digital natives who are restless. *EDUCAUSE review, 41*(2), 16.

[43] Warschauer, M., & Kern, R. (2000). *Network-based language teaching: Concepts and practice*: Cambridge university press.