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On the Effect of Employing Story-Based Video Games on Iraqi EFL Learners' Vocabulary Retention and Motivation

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Abstract

The current study was an attempt to examine the effect of employing story-based video games on vocabulary retention of Iraqi EFL learners. In order to accomplish the purpose of the study, 40 pre-intermediate Iraqi EFL learners, divided into two groups of experimental and control groups with 20 participants assigned to the experimental group and 20 participants assigned to the control group. The experimental group received vocabulary instruction by employing story-based video game: Clifford the Big Red Dog. The treatment took15 sessions. In each session twenty minutes were devoted to vocabulary instruction. The control group enjoyed other techniques of vocabulary teaching, the traditional techniques including visual techniques (such as blackboard drawings) and verbal techniques (such as synonyms, definitions, giving examples and dictionary use) which were prevalent in Iraqi EFL contexts were used. The duration was also 15 sessions and in each session twenty minutes were devoted to vocabulary instruction. For the motivation part, Gardner's Motivation Test (2004) was given to the learners before and after treatment in both control and experimental group. The quantitative analyses were carried out by independent-sample t-test as well as Wilcoxon Signed-rank test to determine the differences between the groups with regard to vocabulary retention and motivation. The results revealed that there was a statistically significant difference between the groups in terms of vocabulary retention and motivation, which suggest the effectiveness of employing story-based video games in helping the learners expand their vocabulary knowledge.

Introduction

There is no doubt that vocabulary knowledge is of great importance to learning a second or foreign language. According to Thornberry (2004), without grammar, we might not be able to express ourselves accurately, but without vocabulary, we can express nothing. That is why vocabulary teaching is considered as one of the most important aspects of any language class. The main reason behind this claim lies in the fact that vocabulary is the main vehicle which carries meaning (Zhang, 2016).

In the current digital age, the disconnection of the inside and outside of the classroom and the importance of the promotion and development of group dynamics is increasingly being addressed with the proliferation of interactive, communicative and collaborative platforms, such as email, instant messaging, video games, wikis, blogs, forums, social-networking sites and virtual-learning environments (Motteram & Sharma, 2009). Moreover, the use of video games for learning is a relatively recent phenomenon; it is not surprising to see that there is little research on pedagogical potential and implications in foreign language learning (Gromik, 2015).

The success on foreign language learning is infused with many factors as intelligence, attitudes, abilities and motivation (Mantiri, 2015; Santana et al., 2016; Støen and Haugan, 2016). Among them, motivation is the main factor affecting foreign language learning since it mediates the attitudes toward the target language and the outputs in the process of learning it (Mantiri, 2015; Kazantseva et al., 2016). Motivation is a basic and complex psychological process, which can affect several aspects such as cognition, behavior, emotion, decision making process and biological aspects (Gonzalez, 2008; Marshall, 2010; Woon et al., 2016). Motivation is a force that activates, encourage, directs and keeps goal directed behavior (Gonzalez, 2008; Marshall, 2010; Woon et al., 2016).

Statement of the problem

Vocabulary plays a pivotal role in the EFL classroom (Nam, 2010). Indeed, vocabulary is often seen as critically important in the path of learning a foreign language. Along the same line, effective second language vocabulary acquisition is particularly important for EFL learners. In spite of this, many Iraqi EFL learners frequently suffer from poor vocabulary, despite years of English study. In fact, one of the much heard complaints among Iraqi English learners is that they feel desperate in developing a reliably vast range of

vocabulary words. Considering this, it can be suggested that one of the major concerns among all teachers and researchers is how to efficiently improve learners' vocabulary.

The consideration of this study is vocabulary retention. The question of how vocabulary can be taught efficiently in a way that engages the learner and promotes long-term retention for easy retrieval for future communication needs to be addressed. Yet the question of what types of input the teacher can deliver in the class so as to transfer vocabulary from input to intake has remained widely unanswered. L2 learners need to internalize new words and store them in their long-term memory in order to easily use them in oral and written communication.

There is no doubt that, motivation is one of the most crucial factors determining one's success in learning a foreign language. As Gardner (1991) has put it, motivation acts as a strong force which "pushes students towards some educational goals that are otherwise hard to achieve" (p. 60). With regard to what was said, this study will be an attempt to see whether implementing video games in teaching vocabulary can enhance learners' motivation to learn new lexical items more successfully.

1.3. Research questions

This study attempts to answer the following questions:

Q1: Does employing story-based video games have any significant effect on Iraqi EFL learners' vocabulary retention?

Q2: Is there any statistically significant difference in the motivation of Iraqi EFL learners being exposed to story-based video games and those who are not?

Significance of the study

The possibility of the pedagogical use of video games has recently caught experts' attention in the field of education. Many researchers concur with (Piaget, 1962)who believed that play is crucial to learning new skills, and recently, studies and projects, organizations, and books have emerged exploring new uses for game-based technologies in learning (Squire, 2008). (Vahdat & Behbahani, 2013)believes that video games provide a context in which participants can discuss scenarios and outcomes in order to facilitate their understanding of other concepts and can improve children's reading, spelling, and spatial abilities and critical-analyzing techniques.

Sorensen and Meyer (2007), and Yip and Kwan (2006) regard games as effective educational aids which increase motivation and improve students' vocabulary learning. Zarei's studies (2014) showed that multimedia glosses create a pleasant environment, facilitate learning, and retention of materials in learners' minds.

From the researcher's perspective the findings of this study on the probable relationship between Iraqi EFL learners' vocabulary retention and playing story- based video games and of course their motivation towards story-based video games are important because it might provide useful information for instructors who plan to use video games as teaching tools, which might enhance students learning in ESL and EFL courses. In addition, the findings of the current study would be fruitful for curriculum designers, language instructors, language learners, and policy-makers in the ELT area.

Definition of key terms

Video games: Esposito (2005) defines a video game as "a game which we play thanks to an audio-visual apparatus and which can be based on a story."

Story-based video games: A story-based video game is a game where two or more persons collaborate on telling a spontaneous story. Usually, each player takes care of one or more characters in the developing story (Bethke, 2003).

Vocabulary Retention: "It refers to the ability to recall or remember things after an interval of time" (Richards & Schmidt, 2002, p. 457).

Motivation: Brown (2001) stated that "motivation is the extent to which you make choices about (a) goals to pursue and (b) the effort you will devote to that pursuit" (Brown, 2001, p.72). According to Gardner (1985), motivation is the combination of effort plus desire to achieve the goal of learning the language plus a favorable attitude towards learning the language.

Review of literature

The nature of video games

According to(Deubel, 2006), video game-based learning has the ability to engage and motivate students and present learning experiences while helping long-term memory and providing practical experience. Deubel suggests that in order for teachers to effectively use game-based learning in the classroom, they must first find games without violence that facilitate planning and problem-solving and relate to the curriculum. Deubel advocates role-playing, simulation, and adventure games because they often appeal to the development of more than just one skill. Deubel also notes the function of game-based learning in the development of vocabulary skills and the enhancement of mental quickness. In regard to(Griffiths, Davies, & Chappell, 2003), video games supply a great tool for managing educational research. They assert that video games have "great variety".

Video Games

Bernal-Merino (2015) describes that the term ‘game’ can be considered as the “hypernym par excellence” (p.12). He believes that even though the act of playing is a universal action, the themes and activities themselves may not be universal. It is possible that games involve one or many players. It is true that there is a competition factor in them, but their main objective is to amuse the people who participate actively by playing, or by watching those playing passively. He explains that there are many types of games, for example, cards, football, billiards, catch, charades, marbles, I spy, dice, connect4, grownups, video games and many more, each involving different rules and props (p.13). Some of these games have existed for millennia and some games may be invented at any point in the future by anybody. He concludes that new tools and technologies, such as video games, have a definitive role to play. (p.14)

Video games and psychology

(Shaffer, Squire, Halverson, & Gee, 2005) discussed the psychological aspects of video games: the virtual world makes it possible to develop situated understanding, effective social practices, and shared values, and helps gamers acquire an epistemic view of the content. They concluded that the epistemic frame making, as well as the integrated knowing and doing of the virtual world, are powerful tools for learning.

(Ang & Zaphiris, 2006) analyzed studies related to video games and language learning. Regarding the psychological concepts in language learning, they found that video games contributed in ways that would be considered behavioral and constructivist in nature. Video games in language learning use repetition (behaviorism) and processes of organization of thought and adaptation (constructivism).

The importance of Motivation

By motivation it is possible to identify the extent of people’s wish to perform a task. The term that is applied quite broadly in the field of education is motivation as is an effective factor in learning and academic success and many researchers from various field of education studies have tried to define, analyze and conceptualize motivation. Brown (1994) has recognized the motivation as “desire, inner drive, impulse that moves one toward a special action” (p.22). Meyer and Maehr (2004) offered that motivation is single and theoretical construct certainly to refer to “the initiation, direction, intensity, persistence and quality of behavior, especially behavior with the goal” (p.87). Based on Keller and Salehi and Ziahosseini (2008), motivation consists of choices people make to approach their aims and the level of influence they apply in that respect.

The most applied concept in describing the failure or success of a student is motivation. Based on Dörnyei (1998), a useful clue for learning is motivation. Motivation is a desire, inner source, reason, emotion, requirement, stroke or aim that drives a person to a certain performance. One of the main characteristics that affect the speed and success of foreign language students is motivation. Moiin Vaziri (2008) argued that the original incentives in second/foreign (L2) motivation research drives from the social psychology as learning the language of another society cannot be separated simply from the students’ social dispositions towards the speech community in question. a "social psychological model" has offered by Lambert (1963). He has divided elements to cognitive factors such as language talents and intelligence and affective factors such as attitudes and motivation. He offers that motivation, attitudes towards the other community and orientations towards language learning could affect the level that an individual needs a second language. Gardner (1985) also has defined L2 motivation as “the amount of works or strives to learn the language because of a desire to do so and the amount of satisfaction experienced by activity” (p.45). As Dörnyei (1998) pointed out in Gardner’s theory, motivation does not include any integrative or instrumental factors.

The importance of vocabulary retention

Experts in the domain of vocabulary claim that building vocabulary plays a crucial role in learning and using a foreign language (Schmitt, 2000). Furthermore, researchers such as(Maximo, 2000), (O'Dell et al., 2000), (Gu, 2003)and (Nation, 2001) contend that the acquisition of vocabulary is essential for successful second language use and plays an important role in paving the way to develop all four language skills (i.e. listening, speaking, reading and writing) in EFL/ESL contexts.(Nunan, 1991) argues that without a large vocabulary, someone will be unable to use the structures and functions of a language one has learned for comprehensible communication. Vocabulary also plays a very important role in reading comprehension in which L2 readers need a vocabulary of between 2000 and 7000 words (Swaffar, 1988). Meanwhile, to survive in academic coursework, L2 learners need around 5000 to 7000 words according to(Grabe, 1991).(Kang & Dennis, 1995)found that one of the best ways to enhance second language vocabulary learning is to use a context-embedded approach in which new words are presented in context.(Bahrick & Phelphs, 1987)argues that how well people remember anything related to how intensely they treat it. Hence, the different method has been suggested to promote vocabulary retention. Focusing on the characteristics of the new word and its textual context is supposed to promote retention. Learning in a context related to repeating, recycling, and representing vocabularies as well as re-noticing them by the student.

In his study, target English words, with their meanings by animations in the video game and one or more example sentences, were presented to learners via video game and computer audio. Learners could hear the target words as many times as desired.

Methodology

Participants

For the current study, 40pre-intermediate maleIraqi high school students were selected. They were divided into two groups, control group (N=20) and experimental group (N=20).The age of these participants ranges from 15 to 17 years old. Gender was not considered as a variable. In order to make sure of homogeneity, participants were selected out of a pool of 60 participants based on their English score.

Instrumentation

Video game

The main research instrument in the present research wasa video game utilized for the experimental group. Clifford the Big Red Dog is a story-based video game based on an American children's book series about a big red dog named Clifford. The book was written by Norman Bridwell (1928–2014). The activities which exist in the Clifford the Big Red Dog provide meaningful learning experiences that engage students in building vocabulary, memorizing vocbulary and enhance their reading vocabulary (http://teacher.scholastic.com/clifford1/standards.htm).

Clifford the Big Red Dog was a story-based video game which had 2 main characters: 1. Clifford the big red dog that his size is inconsistent 2. Emily Elizabeth adopted Clifford when he was a very small puppy, when her parents gave him to her on her 6th birthday. In the game they go to different places like school, park, museum, laboratory etc. and touch specific objects and when you click on them the voice of the speaker came up and pronounce the perfect pronunciation of that word and you see that special object appear by beautiful animation in front of the monitor to stick in the mind of the learner. These activities provide meaningful learning experiences that engage students by clicking on objects and seeing the real object on the monitor and no meaning is allowed in the process of playing the story-based video game

3.1.1. Motivation Questionnaire

An adapted translated version of Gardner's Motivation Test (2004) employed by Ghonchepour (2020) was utilized to collect the data. It was a 5-point scale questionnaire coded as Strongly Disagree=1, Disagree=2, Neutral=3, Agree=4 and Strongly Agree=5.

Researcher-made vocabulary test

The third instrument was a vocabulary test used as a pre-test. It consisted of seventy five vocabulary items. These words all came from the story-based video game called Clifford the Big Red Dog. It should be noted here that the vocabulary items for pretest and posttest were chosen from the story-based video game called Clifford the Big Red Dogwhich was higher than the current level of the students.

Procedure

The participants were studying in two different classes with the same level of proficiency (pre-intermediate). Then the two classes were randomly assigned to a control and an experimental group. Having homogenized the participants through their English score, a vocabulary pretest was conducted. A list of seventy- five vocabulary items chosen from the story-based video game called Clifford the Big Red Dog was distributed among the learners.

For the motivation part, Gardner's Motivation Test (2004) was given to the learners before and after treatment in both control and experimental groupto check their attitudes and perception towards vocabulary learning before and after the treatment. The questionnaire was an adapted translated version of Gardner's Motivation Test (2004) employed by Ghonchepour (2020). It was a 5-point scale questionnaire coded as Strongly Disagree=1, Disagree=2, Neutral=3, Agree=4 and Strongly Agree=5.

The next step was conducting the study treatment. The first group, called the experimental group received vocabulary instruction accompanied by the story-based video game called Clifford the Big Red Dog. This treatment took 15 sessions. In each session twenty minutes were devoted to vocabulary instruction. During the teaching process, the target words were presented in the video game. The teacher tried to convey the meanings of the lexical items based on the video game illustration.

The second group, called the control group, received vocabulary instruction without applying the video game. Here, the traditional techniques including visual techniques (such as blackboard drawings) and verbal techniques (such as synonyms, definitions, giving examples and dictionary use) which were prevalent in Iraqi EFL contexts were used. Gairns and Redman (1986) point out that the traditional techniques of teaching vocabulary are classified into three categories: visual, verbal and translation. Visual techniques consist of flashcards, photographs, blackboard drawings, wall charts, realia, mime and gestures. Verbal techniques include synonym and definition, contrasts and opposites, scales and examples. Translation is using mother tongue in the class which is an effective way to convey meaning. The duration here again was also 15 sessions and in each session twenty minutes were devoted to vocabulary instruction.

As the next step, the participants sat for the vocabulary posttest in which they answered the same questions as they did in the pretest. Moreover, they filled out a questionnaire intended to compare the motivational beliefs of the learners.

Results and Discussion

Validity of the vocabulary test using Confirmatory Factor Analysis (CFA) based on Structural Equation Model: SEM with LISREL software

Confirmatory factor analysis uses several statistical tests to determine the adequacy of the model with the data.

In order to prove the model of confirmatory factor analysis, first, the t-value must be significant, this means that at the 95% confidence level, they must be greater than 1.96 or less than -1.96 ($t > 1.96$ or $t < -1.96$) and secondly, its indicators have an applicable fitting indexes. The indices used in this study are: Relative chi-square, which is calculated by dividing the chi-square value by the degree of freedom of the model ($\chi 2/df$) that the acceptable value for this index is between 1 and 3 respectively. RMSEA (root mean squared error of approximation) acceptable models have a value less than 0.08. Also AGFI, GFI, IFI, CFI and NFI indices that the acceptable value for these indices should be greater than 0.9.

The confirmatory factor analysis diagrams of the vocabulary test, i.e. the diagram of path coefficients and t-value (Figures 1 and 2) are shown below.

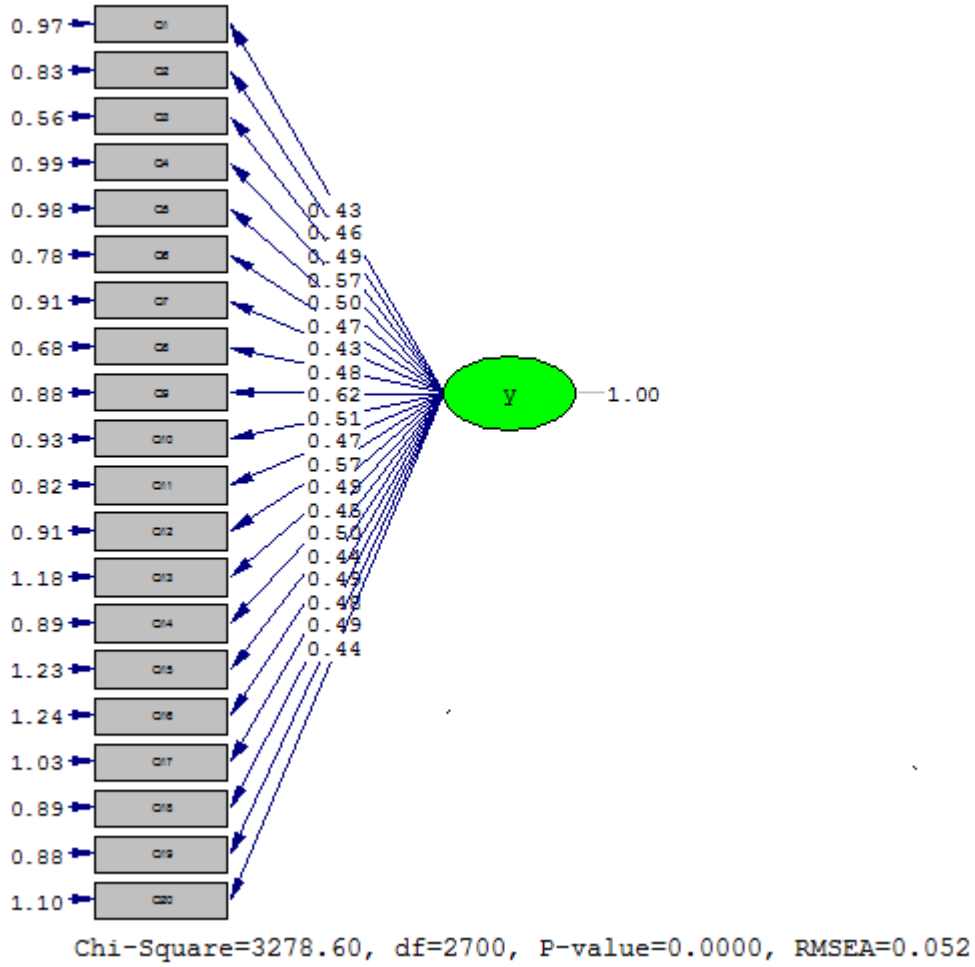

Figure 1. Path Coefficients

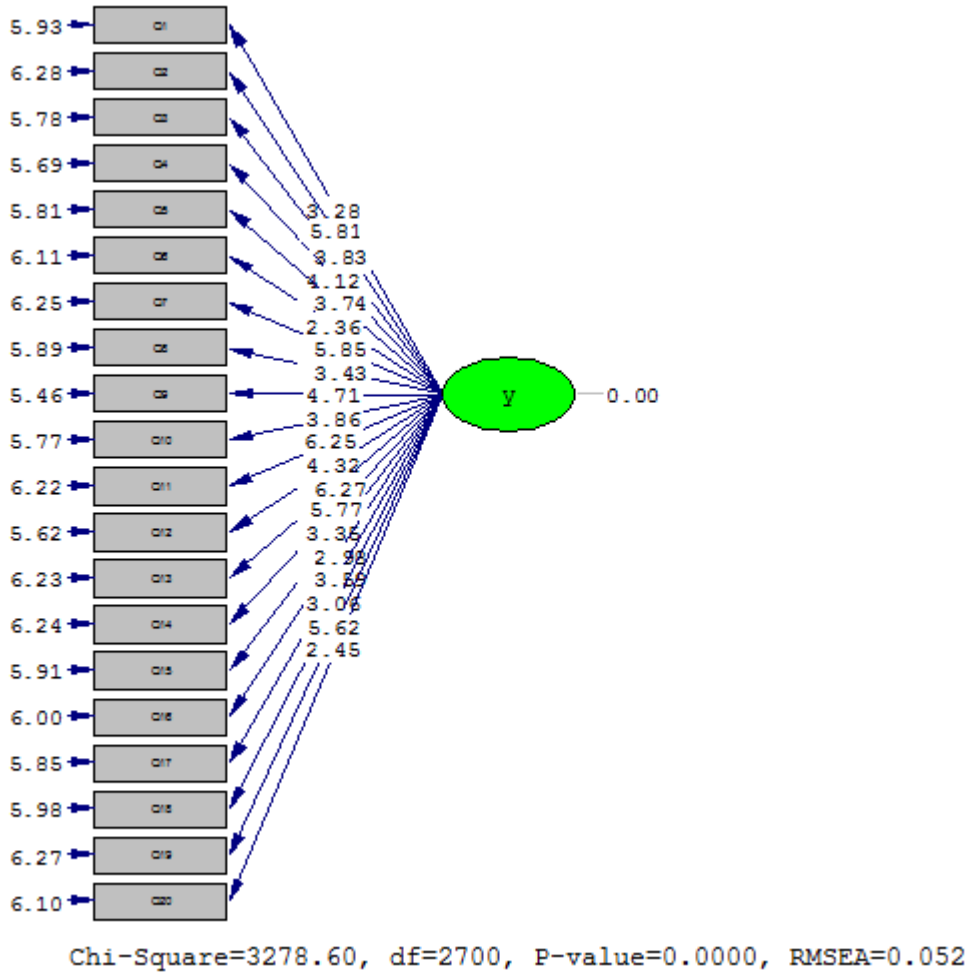

Figure 2. T-value

Table 1. portrays that the t-value in all cases is greater than 1.96 or less than -1.96, so it can be concluded that the questions of the vocabulary test provide a suitable structure in the research model.

Table 1. Goodness-of-fit indices

χ2/DF	**RMSEA**	**NFI**	**GFI**	**IFI**	**CFI**	**AGFI**
1.21	0.052	0.92	0.93	0.92	0.94	0.93

Reliability of vocabulary test

Reliability is a technical feature of measuring instruments. This concept deals with the extent to which measuring instruments produce the same results under the same conditions. The reliability coefficient ranges from zero to one. In this study, Cronbach's alpha method was used to determine the reliability of the test. If the alpha value is more than 0.7, it indicates good reliability, and if it is between 0.5 and 0.7, it indicates moderate reliability. In the present study, in order to determine the reliability of the vocabulary test, the Cronbach's alpha value was calculated using SPSS software. The results are shown in the table 4.11. The Cronbach's alpha obtained for the vocabulary test is equal to 0.709, which is higher than 0.7, so the reliability of the vocabulary test can be confirmed.

Table 2. Reliability Statistics

Cronbach's Alpha	N of Items
0.709	75

Research Results

The results of the analysis are presented discretely for each of the research questions in the following sections.

Research Question One

Does employing story-based video games have any significant effect on Iraqi EFL learners' vocabulary retention?

In order to answer the first research question (i.e., Does employing story-based video games have any significant effect on Iraqi EFL learners' vocabulary retention?), The experimental group received vocabulary teaching enriched with the video game; Clifford the Big Red Dog was a story-based video game which had two main characters: Clifford the big red dog that his size is inconsistent,and Emily Elizabeth adopted Clifford when he was a very small puppy, when her parents gave him to her on her 6th birthday. In the game they go to different places like school, park, museum, laboratory etc. and touch specific objects and when you click on them the voice of the speaker came up and pronounce the perfect pronunciation of that word and you see that special object appear by beautiful animation in front of the monitor to stick in the mind of the learner. These activities provide meaningful learning experiences that engage students by clicking on objects and seeing the real object on the monitor and no meaning is allowed in the process of playing the video game. On the other hand, the control group enjoyed the traditional ways of teaching vocabularies such as blackboard drawings, synonyms, definitions, giving examples and dictionary use.

Paired sample T-test on Experimental Group

As displayed in Table 3, the mean score of English vocabulary posttest (M=61) is higher than the mean score of pretest (M=48.5) in the experimental group.

Table 3. Paired Samples Test; Pretest and Posttest of Experimental Group

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair	pretest - posttest	-12.50000	1.23544	.27625	-13.07820	-11.92180	-45.248	19	.000

The results of revealed that there was statistically a significant difference between the pretest and posttest scores of the experimental group (sig=0.000 t= -45.248) and (P<0.05). This showed that there was a significant difference between students' vocabulary retention before and after teaching by the video game.

Paired sample T-test on Control Group

As displayed in Table 4 the mean score of English vocabulary posttest (M=53) is higher than the mean score of pretest (M=48) in the experimental group.

Table 4 Paired Samples Test; Pretest and Posttest of Control Group

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	*t*	df	Sig. (2-tailed)
Pair	pretest - posttest	-5.00000	1.16980	.26157	-5.54748	-4.45252	-19.115	19	.000

The results of the paired sample t-test revealed that there was statistically a significant difference between the pretest and posttest scores of the control group (sig=0.000 t= -19.115) and (P<0.05). This showed that there was a significant difference between students' vocabulary retention before and after teaching through traditional ways. But the difference between the mean scores of pretest and posttest in the experimental group was higher than the mean scores of pretest and posttest in the control group. Therefore, the experimental group had better improvement in vocabulary retention.

Independent sample T-test

In order to compare the experimental and control groups' means on posttest of vocabulary, an independent sample t-test was run to see whether there was any significant difference between the posttest scores of students who learned the vocabulary through the traditional teaching method and those who learned the same vocabulary through playing story-based video games. Based on the results displayed in Table 5, it could be concluded that the experimental group (M=61) had a higher mean than the control group (M=53) on the posttest of vocabulary.

Table 5 Descriptive Statistics; Posttest of Vocabulary by Groups

	Group	N	Mean	Std. Deviation	Std. Error Mean
posttest	control	20	53.0000	6.66491	1.49032
	experimental	20	61.0000	6.57747	1.47077

Table 6 Independent Samples Test; Posttest of Vocabulary by Groups

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
posttest	Equal variances assumed	.066	.799	-3.821	38	.000	-8.00000	2.09385	-12.23878	-3.76122
	Equal variances not assumed			-3.821	37.993	.000	-8.00000	2.09385	-12.23880	-3.76120

Table 6 indicated there was a statistically significant difference in the scores of the control group and the experimental group.

Research Question Two

Is there any statistically significant difference in the motivation of Iraqi EFL learners being exposed to story-based video games and those who are not?

The purpose of the second research question was to compare the effect of using story-based video game on the Iraqi EFL learners' motivation. In order to answer this research question, the students were given Gardner's Motivation Test (2004). It was a 5-point scale questionnaire coded as Strongly Disagree=1, Disagree=2, Neutral=3, Agree=4 and Strongly Agree=5.

4.4.2.1. Nonparametric Test on Experimental Group

At first, the descriptive statistics for motivation of experimental group are calculated and displayed in Table 6 below.

Table 6. Descriptive Statistics of the Motivation Tests by Experimental Group

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
before treatment on experimental group	20	2.30	1.174	1	5
after treatment on experimental group	20	4.10	.852	3	5

As displayed in Table 6 the mean score of Motivation test after the treatment (M=4.10) is higher than the mean score of Motivation test before the treatment (M=2.30) in the experimental group.

Table 7 Wilcoxon Signed Ranks Test

Z	-3.456[b]
Asymp. Sig. (2-tailed)	.001

a. Wilcoxon Signed Ranks Test
b. Based on negative ranks.

The results of Wilcoxon Signed Ranks in Table 7 revealed that there was statistically a significant difference between the

motivation scores of the experimental group. (Sig=0.001 Z= -3.456) and (P<0.05) showed that there were significant differences between students' motivation toward learning English before and after teaching by the video game.

Nonparametric Test on Control Group

Z	-2.138[b]
Asymp. Sig. (2-tailed)	.033

At first, the descriptive statistics for motivation of control group are calculated and displayed in Table 8

Table 8. Descriptive Statistics of the Motivation Tests by Control Group

Z	-2.138[b]
Asymp. Sig. (2-tailed)	.033

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
before treatment on control group	20	2.55	1.395	1	5
after treatment on control group	20	3.05	1.276	1	5

As displayed in Table 8, the mean score of Motivation test after the treatment (M=3.05) is higher than the mean score of Motivation test before the treatment (M=2.55) in the experimental group.

Table 8. Wilcoxon Signed Ranks Test of Control Group

The results of the Wilcoxon Signed Ranks Test in Table 8 revealed that there was statistically a significant difference between the motivation scores of the control group. (Sig=0.033 Z= -2.138) and (P<0.05). The table showed that there was a significant difference between students' motivation toward learning English before and after teaching through traditional ways. But the difference between the mean scores of the Motivation Test after the treatment in the experimental group was higher than the mean scores of the Motivation Test in the control group. Therefore, the experimental group had better improvement in vocabulary learning.

Discussion

This study was an attempt to investigate the effect of the story-based video game on Iraqi EFL learner's vocabulary retention and motivation. Using videogames for learning another language is not a new phenomenon. Research also illustrates that video games as a pedagogical tool result in more active, interested and critical learning (Shaffer et al., 2005).

(Schlimme, 2002) believes that video games can help language learners through providing a context in which language learners can participate in conversational debates to facilitate their comprehension of other concepts and can improve learners' reading, spelling, and spatial abilities and critical-analyzing techniques. Besides these, (Schlimme, 2002) claims that in some simulation video games players will face unfamiliar words in new situations which are needed in order to succeed in the game, and, therefore, the players' vocabulary knowledge may improve as a result.

A research finding of (Aslanabadi & Rasouli, 2013) revealed that online language games affected kindergarten children's vocabulary learning and retention of English vocabulary. They state that games not only bring fun to the class, but also build students' confidence and motivate them and this is in the line with the research questions in the present study.

(Shaffer et al., 2005) elaborated on the psychological aspects of video games: the virtual world makes it possible to develop contextual understanding, effective social interaction, and shared values, and helps gamers acquire an epistemic view of the content. This contextual understanding can cause better vocabulary comprehension and production. In line with this study, (Budiyono, 1988) used video games for learning vocabulary through the use

of adventure games. Another article about learning vocabulary via video games uses the first episode of a serious adventure game of Run Away: A Road Adventure (Vahdat & Behbahani, 2013).

It can be concluded that using a story-based video game as a suitable tool is more effective than traditional ways. They are effective in helping students expand exposure to vocabulary and providing students with meaningful practice of language, thus they play a significant role in retention of vocabulary and also based on the findings of this research, playing a story-based video game has a significant effect on Iraqi EFL learners' motivation.

Conclusion

As mentioned before, the purpose of this study was to investigate the effects of the story-based video game on Iraqi EFL learners' retention and motivation. To this end, the impact of the story-based video game was investigated through conducting a quasi-experimental study on two groups of pre-intermediate language learners. By running an independent-samples t-test, it was revealed that there was a statistically significant difference between the story-based video game (experimental) group's vocabulary scores and those of control group.

Moreover, the attempt was made to examine the learners' vocabulary motivation differences between the experimental and the control groups after the treatment. In order to catch the results regarding motivation differences, a Wilcoxon-Signed rank test was used. The results obtained from the test suggested that there was a statistically significant difference between the learners' motivation in the experimental and the control group after the treatment. So, it can be concluded that vocabulary teaching using story-based video games has a significant effect on Iraqi EFL learners' motivation.

This study revealed that Iraqi EFL learners grasped the meaning of unknown words through playing the story-based video game. The results obtained from the statistical procedures suggested that involving learners in the story-based video game had a statistically meaningful effect on the learners' achievement in vocabulary retention. Moreover, in comparing the results across control and experimental groups after the treatment by means of an independent samples t-test it was found that the experimental group outperformed the control group in vocabulary scores. Employing story-based video game may not be the sole method of vocabulary retention, but it can be used along with more explicit methods to reinforce retention and effectiveness of learning.

Finally, employing story-based video game, as an innovative way of vocabulary teaching, improved the learners' vocabulary motivation. This finding can be specifically significant for children or teenagers who have fragile egos and their attention span is limited. The colorful setting, funny characters, and interesting stories in the story-based video game can be potentially motivating especially in the contexts where the learners' motivation is a major problem.

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