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The Impact of Video Games on Vocabulary Acquisition Among Young Learners in Kurdistan Region of Iraq

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ABSTRACT

This study investigated the impact of video games on vocabulary acquisition among young learners of English as a second language in the Kurdistan region of Iraq-Erbil.The sample consisted of 74 male and female students, aged 12, who were studying English at a public school in the Kurdistan Region. The present study employed a quantitative, quasi-experimental design, where an experimental group received video game-based instruction, while a control group was taught using traditional methods. The results showed that the experimental group experienced an important development in their vocabulary test scores compared to the control group, indicating the effectiveness of video games in enhancing vocabulary acquisition. The study also found that the benefits of video game-based instruction were consistent across participants, regardless of their initial proficiency levels in English and information technology. Furthermore, the study revealed no significant differences in the vocabulary gains between male and female students. The findings suggest that incorporating video games into language learning curricula can be a valuable strategy to support the vocabulary development of young learners in the Kurdistan region. The study provides insights for educators, policymakers,

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and researchers regarding the integration of technology-based learning approaches in language education.

Keywords: English as a second language, Kurdistan region, Language learning, Video games, Vocabulary acquisition, Young learners.

أثر ألعاب الفيديو في اكتساب المفردات لدى المتعلمين الصغار في إقليم كردستان العراق

خوزكه حربى امين كاكه على

جامعة اروميه ايران

الملخص:

تناول هذا البحث أثر ألعاب الفيديو على اكتساب المفردات بين متعلمي اللغة الإنجليزية كلغة ثانية في إقليم كردستان العراق. وكانت عينة البحث متكونة من أربعة و سبعون طالباً وطالبة، تبلغ أعمارهم 12 عاماً، وهؤلاء الطلاب يدرسون اللغة الإنجليزية في المدرسة الحكومية في إقليم كوردستان-العراق-اربيل. استخدم البحث تصميمًا كميًا شبه تجريبي على مجموعتين من الطلاب، حيث تلقت المجموعة التجريبية تعليمات تعتمد على ألعاب الفيديو، بينما تم تدريس المجموعة الضابطة باستخدام الطرق التقليدية. وأظهرت النتائج أن المجموعة التجريبية شهدت تحسنا ملحوظا في درجات اختبار المفردات لديهم مقارنة بالمجموعة الضابطة، مما يدل على فعالية ألعاب الفيديو في تعزيز اكتساب المفردات. ووجد البحث أيضًا أن فوائد التعليم القائم على ألعاب الفيديو كانت متسقة بين المشاركين، بغض النظر عن مستويات كفاءتهم الأولية في اللغة الإنجليزية وتكنولوجيا المعلومات. واضافة إلى ذلك، كشف البحث عن عدم وجود فروق ذات دلالة إحصائية في مكاسب المفردات بين الطلاب والطالبات. بحيث أشارت النتائج إلى أن دمج ألعاب الفيديو في مناهج تعلم اللغة يمكن أن يكون استراتيجية قيمة لدعم تطوير المفردات لدى المتعلمين الصغار في إقليم كردستان. يوفر البحث رؤية واضحة للمعلمين وصانعي السياسات والباحثين فيما يتعلق بدمج مناهج التعلم القائمة على التكنولوجيا في تعليم اللغة.

الكلمات الدالة: اكتساب المفردات، ألعاب الفيديو، تعلم اللغة، إقليم كردستان، المتعلمون الصغار، الإنجليزية كلغة ثانية.

1. INTRODUCTION

Nowadays, computer games play a phenomenal role in the popular of students' routines regardless of their different language learning levels. As regards the importance of games and the effect of such games on the common of students, it is, to some extent, evident that those students spend much of their time playing games with computers, cell phones, etc., some of which are even online. Through the expansion of the Internet, they have access to new games and accordingly to update vocabulary.

It is common sense that learning a new language demands arduous work and perseverance. Thus, a lot of effort and time is required to learn and master a new language. Computer games seem to provide language learners with a lot of motivation and interest. Accordingly, they interest and motivate learners to learn and expand their vocabulary knowledge more efficiently without getting bored. Games make a competitive environment for learners.

Games, and the entertainment value of play, can teach and transform thoughts. We do not acknowledge it during turns at charades or during the rounds of a board game. That’s because games are engaging, enjoyable and exactly because they provide effective means to teach skills and transform thoughts. Learning today is a very different process than it used to be in the past. Although early 20th-century education focused on rote memorization and attained skills (reading, writing, calculation, history, science), much of the way we learn today is through the utilize of higher-order skills. These consist of the capability to think through and solve complex problems or interact critically through language or media. So, games obviously provision this form of education, and game playing is an excellent way to support wire our brains in ways that are vital to the what, why, and how of knowledge wants for the 21st century.

Steinkuehler (2010) emphasizes that students develop various skills that were not used in the era of teaching in the last 20 decades as learners use computer games nowadays (Berlinda & Yudi, 2021). Likewise, Reza (2021) highlights the components of effective learning in their study of the results, showing that playing computer games boosts students' desire and excitement, which in turn transfers this good attitude toward learning.

The researchers also noted that playing computer games improved the links between knowledge and its application in novel contexts. Furthermore, students learn new phrases through games and enjoyment that they may subsequently employ effortlessly in everyday contexts. In case computer games are intended to increase the quality of education, then that would become an integral and indispensable part of the strategies that are being used in modern education in the developed as well as in the majority of the developing countries in the world. Additionally, the way that students learn has changed dramatically as a result of the usage of multimedia in the classroom.

Additionally, the findings of multiple studies show that learners' performance in science, math, reading, and other subjects has improved through well-structured multimedia training (Gunel & Top, 2022). Furthermore, regarding the importance of computers, prior research suggests that computer-assisted instruction (CAI) applications have critical elements that might inspire youngsters, provide them with challenges, spark their interest, and encourage fantasy (Berlinda Mandasari, 2020).

Although computer and video games possess the same multimedia capabilities as CAI programs, parents and educators frequently downplay their potential impact on learning. Despite this, the prevalence and appeal of computer-based video games have been steadily increasing recently, and researchers and game producers have begun to look into how video games affect students' cognitive learning (Mulya, 2020). According to Clark and Mayer (2016), rather than relying just on words in e-learning lessons, educators should also use graphics (such as images, charts, graphs, maps, and drawings) and words (printed on the screen that users read) (Clark & Mayer, 2016). By mentally associating the content with words and pictures and drawing connections between verbal and visual representations, these dual presentations might thereby motivate students to engage in active learning.

To study how texts, pictures, and a combination of text and pictures, differ when it comes to teaching vocabulary, Shahrokni (2009) employed three distinct versions of the same material. Students were able to experience more incidental vocabulary learning when texts and visuals were combined and he has discovered (Shahrokni, 2009). Widyasari (2018) asserts that incorporating spatial-visual intelligence into vocabulary instruction

promotes independent learning and helps students remember vocabulary words for extended periods.

The effect of play video games on language acquisition has been the subject of numerous research conducted in recent years. In terms of gaming's benefits, it has been stated that video games increase motivation and reduce anxiety, but there hasn't been enough research done on how video games affect language learning.

Lastly, a substantial body of research on the influence of video games on language acquisition seems to support the notion that these tools can be highly successful in teaching languages. According to the facts above, playing video games can help pupils learn the language. Although children's vocabulary isn't very useful, our English may be affected by how we respond to a challenge in a game. Like any other type of language learning tool, video games have drawbacks. Numerous studies claim that these reasons prevent the use of many games, especially older ones because they are seldom relevant when playing or lack language. The cognitive overload that comes with using games as a teaching tool is another problem.

A few points need to be clarified while examining the literature on digital games. First, learning and teaching in general, and English learning and teaching specifically, should be discussed. Three trends have been the main focus of research studies about general education: Three approaches are available: 1) digital literacy, 2) game-based learning in schools, and 3) the sociological approach, which describes how games are used in interpersonal relationships and social development. Additionally, it has been discovered that learning English in non-instructional contexts—for example, outside of a classroom to learn the language, or without it—through digital games—has a positive impact on students' vocabulary sizes and English proficiency test results (Sylvén & Sundqvist, 2012). This conclusion may be highly significant, particularly in light of the fact that English has been the language of all technological advancements (Alzeebaree & Hasan, 2020), making it the primary language of media communication globally.

Moreover, the widespread use of English as a lingua franca among IT professionals and businesspeople lends support to the accidental and natural acquisition of the language through continuous language immersion (Klimova & Pikhart, 2021) (Ortiz-Marcos, et al.,

2020). Sundqvist (2009, p. 24), who notes that English is what students interact with or use outside of the classroom, lends credence to this idea(Sundqvist, 2009).

English is widely used in technology, which makes it easily accessible to almost all users. De Wilde, Brysbaert, and Eyckmans (2020) discovered that while most kids made progress in their linguistic abilities, there were notable differences among individuals.

Speaking, playing video games, and using social media were the most productive input sources. In actuality, these are multimodal, interactive input types that call for language development. Additionally, it has been discovered that the majority of language competency exams measure the same things (De Wilde, Brysbaert, & Eyckmans, 2020). Chen and Hsu (2020), reviewing the empirical research on the impact of gaming on vocabulary learning, investigated whether vocabulary and historical information could be learned simultaneously using the serious game Slave Trade. According to Chen and Hsu's (2020) study, which involved sixty-six college EFL students, gaming significantly improves vocabulary and historical knowledge.

Furthermore, the pupils mentioned that the serious game had been a good learning experience for them. Tsai and Tsai (2018), on the other hand, carried out a meta-analysis in L2 contexts on 26 main studies to examine the impact of digital gaming on vocabulary learning. They were divided into four categories according to Mayer's (2015) taxonomy of digital game-based learning study designs. Their study's medium to large effect size offers compelling evidence in favor of using video games to help students learn vocabulary (Tsai & Tsai, 2018).

Similarly, Csikszentmihalyi's (1990) Flow Theory served as the foundation for Chen, Tseng, and Hsiao's (2018) investigation on the efficacy of digital gaming. In their meta-analysis, they examined ten papers. Again, a substantial impact size was discovered, supporting the importance of digital gaming for vocabulary acquisition (Chen, Tseng, & Hsiao, 2018).

In this study, attempts are made to investigate the impact of video games on vocabulary acquisition enhancement. This study attempts to examine the phenomenal problem of video games that play a vital role in improving then expanding learners' vocabulary knowledge via the use of such software. Variables that will be considered in this study include level of English language proficiency and IT proficiency.

The primary aim of this research is to investigate the impact of video game usage on the vocabulary development of young learners in the Kurdistan region of Iraq. Specifically, the study seeks to examine the relationship between the frequency and duration of video game play and the vocabulary acquisition of young learners, identify the specific characteristics of video games that contribute to or hinder vocabulary learning, and explore the perspectives of young learners, parents, and educators on the role of video games in language learning.

2. LITERATURE REVIEW

Video games are a great way to learn language, according to several research. In contrast to students who employed traditional learning methods, Japanese students who played an instructional video game dramatically enhanced their vocabulary in English (deHaan, Reed, & Kuwada, 2010).

A number of research have explicitly looked into how video games affect language retention. Yip and Kwan (2006) examined how well video games taught vocabulary in English to Hong Kong primary school students. According to their research, pupils who included video games in their language learning process were able to recall vocabulary more effectively than those who did not.

According to constructivist learning theories, like those of Vygotsky and Piaget, video games offer immersive, interactive settings that support active learning. This is corroborated by the Cognitive Load Theory, which explains how multimodal presentations in video games reduce cognitive load and improve word memory.

Research studies, such as those conducted by Miller and Hegelheimer (2006) and deHaan, Reed, and Kuwada (2010), show that students who use instructional video games significantly increase their vocabulary.

According to Gee (2003), video games also promote motivation and engagement, two things that are essential for successful learning. There is conflicting evidence about gender differences in game-based learning results; certain research indicate that men may have preferences, but overall, learning outcomes are similar for both genders.

Integrating video games into curricula can thus enhance vocabulary learning, supported by teacher training and policy frameworks that promote technology-enhanced learning environment.

3. METHODOLOGY

The present study is mainly composed of a descriptive design in which the quantitative method is utilized. It goals to identify the impact of computer games on the acquisition of vocabulary and highlights the effect of those factors that have a direct effect on this process. It is noteworthy that the current study is a cross-sectional one; that is, it explores a cross-section (sample) of a population at a single point in time. The sample of the study composed of 36 male and female students of English who were studying English as a second language in an English private institute in KRI. Besides, their age is 12. The participants were supposed to have attained an elementary level of academic proficiency.

The researcher gave the individuals a proficiency exam to ensure that everyone was operating at the same level. Two courses were chosen at random to serve as the study's samples. The experimental and control groups would be these two, with roughly equal numbers of people in each. Attempts have been made to have the participants from the same language background; i.e. Kurdish. The data will be collected by self-made vocabulary tests whose validity and reliability have already been confirmed by Cronbach's alpha where the result was 0.864 and more than 0.7. The games and their corresponding guides were got from the Learn English Kids package of the British Council. The computer games and their instructions, as explained in the Learn English Kids' package of the British Council, are introduced in the following sections:

Trolley Dash

In this game, students have a shopping list. They go to the supermarket and take the items according to their list. The shopping list memory game is a great way to practice recalling lists from memory. First, commit the grocery list to memory. Then, without consulting the list, locate the things in the store fast.

Clothes

In the game, students see the pictures of the clothes. Then, some balloons will be shown that English alphabet have been written on them. Afterwards, learners should burst the right balloons when they go past.

Cold Planet

The lesson plan instructs students to read the hints, locate the ten story's hidden words in the grid, and highlight each word by dragging the mouse over it. The word may be written diagonally, across, above, downwards, or backward. Following their discovery of the ten words in the puzzle, students should click "submit" to verify their response or "answer" to view all of the words.

3.1 PRETEST and POSTTEST

Pretests are provided to the experimental group prior to treatment, and the subjects will receive the same test, the pretest-posttest design, following the treatment. This approach is commonly employed in genuine experiments. To evaluate changes and compare groups with one other, a pretest-posttest design is typically the recommended approach in genuine experimental designs. The advantage is that it lets the administrator compare the pretest and posttest results between the two groups to determine how the experimental modification affected the individuals. An elementary vocabulary levels test has been used as pretest and posttest. The test includes a text similar to a Cloze test in multiple ratio method in which the participants were requested to fill in the blanks with proper words based on the multiple-choice items given for each blank.

3.2 THE PROCEDURES

Two different groups (i.e., control and experimental) were randomly selected. Attempts were made to keep the number of participants in both groups semi-equal. At the beginning, both groups were given a vocabulary test in order to explore their language proficiency. The experimental group was taught via the use of computer games, whereas the other group was treated and taught according to the regularities of the institute in which the subjects of this study have been chosen. For, on the basis of the nature as well as the gaps which were explored through reviewing the literature, the use of different instruments and statistical procedures are prone to the literature reviewed. To analyze the

data, SPSS v. 21 was used. Independent Sample T-test was used to compare the results between male then female groups. ANCOVA also was used to compare the results of control and experimental groups.

4. FINDINGS

This section presents the frequency and percentage distribution of participants in study according to their gender. The data is summarized in Table 1 below includes 74 Participants,consisting of 35 females and 39 male.The participnts are divided into two control groups,with (36) participants and observation with (38) participants.

Table 1: frequency of participants according gender

Group		Frequency	Percent
Control	Female	19	52.8
	Male	17	47.2
	Total	36	100
Observation	Female	16	42.1
	Male	22	57.9
	Total	38	100

The data in Table 1 shows the gender distribution of the 74 participants in the research. Of the total participants in control group, 19 (52.8%) were female and 17 (47.2%) were male. These results suggest a relatively balanced gender representation in the study, with a slightly higher proportion of female participants compared to male participants.In the observation group 16(42.1%) were female and 22 (57.9%) were male .

The pretest and posttest results for the two participant groups—the control group and the observation group—are summarized in Table 2.

Table 2: summary statistics of pretest and posttest according to groups

		N	Mean	Std. Deviation
Control	pre-test	36	9.89	2.906
	post-test	36	8.75	4.038
Observation	pre-test	38	9.79	3.618
	post-test	38	11.18	3.432

According to the data provided for the control group, the pretest mean score was 9.89, with a standard deviation of 2.906. On the other hand, the posttest's mean score dropped to 8.75 with a 4.038 standard deviation. The decrease in performance from the pretest to the posttest implies that the control group did not show any growth throughout the investigation. The observation group, however, showed a distinct pattern. The mean pretest score for this group was 9.79 with a standard deviation of 3.618. Notably, the mean posttest score increased to 11.18 with a standard deviation of 3.432. This increase in performance from the pretest to the posttest indicates that the observation group experienced improvements, potentially as a result of the intervention or treatment they received. It is worth noting that both the control group and the observation group had a similar number of participants, with 36 and 38 individuals, respectively. This balanced sample size across the two groups strengthens the comparison of their performance outcomes.

Overall, the results suggest that the observation group experienced a positive change in performance, while the control group experienced a negative change. This finding could designate that the intervention otherwise treatment received by the observation group was effective in improving their performance compared to the control group. To more reliable evidences to confirm elementary results of Table 2 we used ANCOVA test that is presented in following. The results of the One-Sample Kolmogorov-Smirnov Test presented in Table 3 evaluate the normality of the pretest and posttest data. Assessing the normality of the data is a crucial assumption for conducting an analysis of covariance (ANCOVA).

Table 3: results of One-Sample Kolmogorov-Smirnov Test

		pre-test	post-test
N		74	74
Normal Parameters	Mean	9.84	10.00
	Std. Deviation	3.269	3.910
Most Extreme Differences	Absolute	.132	.101
	Positive	.132	.101
	Negative	-.066	-.062
Test Statistic		.132	.101
Asymp. Sig. (2-tailed)		.284	.596

The table indicates that the test was performed on a total of 74 participants for both the pretest and posttest. The mean pretest score was 9.84 with a standard deviation of 3.269, while the mean posttest score was 10.00 with a standard deviation of 3.910. The maximum absolute difference between the observed and expected cumulative distributions was 0.132 for the pretest and 0.101 for the posttest, with corresponding test statistic values of 0.132 and 0.101, respectively. Importantly, the asymptotic significance (2-tailed) values for both the pretest (0.284) and posttest (0.596) are greater than the usually utilized significance level of 0.05. This suggests that the null hypothesis of normality cannot be rejected, indicating that the pretest and posttest data do not deviate significantly from a normal distribution. These findings fulfill the normality assumption required for the subsequent ANCOVA analysis.

The data appears to be normally distributed, allowing for the valid application of the ANCOVA statistical method to comparability the performance of the control and observation groups while accounting for the pretest scores as a covariate. The outcomes presented in Table 4 display the findings of the Test of Homogeneity of Variances, which evaluates the second crucial assumption for conducting an analysis of covariance (ANCOVA) - the homogeneity of variances between the groups.

Table 4: Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
pre-test	Based on Mean	3.021	1	72	.086
	Based on Median	3.053	1	72	.085
	Based on Median and with adjusted df	3.053	1	71.590	.085
	Based on trimmed mean	2.904	1	72	.093
post-test	Based on Mean	1.386	1	72	.243
	Based on Median	1.230	1	72	.271
	Based on Median and with adjusted df	1.230	1	70.634	.271
	Based on trimmed mean	1.453	1	72	.232

The table presents various Levene's test statistics to assess the equality of variances between the control and observation groups for both the pretest and posttest scores. For the pretest scores, the Levene statistic based on the mean is 3.021 with a significance value of 0.086, while the Levene statistic based on the median is 3.053 with a

significance value of 0.085. The Levene statistic based on the median with adjusted degrees of freedom is also 3.053 with a significance value of 0.085, and the Levene statistic based on the trimmed mean is 2.904 with a significance value of 0.093.

Similarly, for the posttest scores, the Levene statistic based on the mean is 1.386 with a significance value of 0.243, the Levene statistic based on the median is 1.230 with a significance value of 0.271, the Levene statistic based on the median with adjusted degrees of freedom is 1.230 with a significance value of 0.271, and the Levene statistic founded on the trimmed mean is 1.453 with a significance value of 0.232. Importantly, all the reported significance values are greater than the usually utilized significance level of 0.05. This indicates that the null hypothesis of equal variances between the control and observation groups cannot be rejected for both the pretest and posttest scores. These findings demonstrate that the assumption of homogeneity of variances is met, satisfying another key prerequisite for the valid application of the ANCOVA statistical technique. In order to allow for a thorough comparison of the groups' performances while taking the pretest scores into account as a covariate, the data shows consistent variation across the groups. Using the Kuder-Richardson formula, a measure of internal consistency, the reliability of the pretest variable was evaluated. Following is the formula that is used:

$$r_2 = \frac{n}{n-1}\left(1 - \frac{\bar{x}(n-\bar{x})}{n \times s^2}\right) = \frac{74}{73}(1 - \frac{9.84(74-9.84)}{74 \times (3.269)^2} = 0.2044038$$

Where (=9.84) is the pretest scores' mean, (=) is the pretest scores' variance, and n (=74) is the number of items—in this example, the pretest scores. With an estimated Kuder-Richardson reliability coefficient () of 0.2044038, the pretest variable's level of internal consistency is comparatively poor. This implies that there's a chance the pretest results aren't very consistent or dependable within the sample. The Kuder-Richardson formula is frequently applied to dichotomous (binary) variables; hence, its applicability for continuous variables, such as the pretest scores in this instance, may be restricted. However, the estimated internal consistency of the pretest measure is provided by the reliability coefficient, and this should be taken into account when evaluating the results of the ANCOVA analysis that follows. The results of the tests of

between-subjects effects are shown in Table 5, which offers insightful information about the analysis of covariance (ANCOVA) performed on the post-test results.

Table 5: Tests of Between-Subjects Effects alone

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	463.229	2	231.615	25.192	.000
Intercept	88.642	1	88.642	9.641	.003
Gro * PrT	463.229	2	231.615	25.192	.394
Error	652.771	71	9.194		
Total	8516.000	74			
Corrected Total	1116.000	73			

The F-statistic of 25.192 and the accompanying p-value of 0.000, which is less than the widely accepted significance threshold of 0.05, show that the corrected model, which includes the independent variable (group) and the covariate (pretest score), explains a significant portion of the variance in the posttest scores. An estimated 40% of the variation in the posttest scores can be explained by the independent variable and the covariate, according to the corrected model's R-squared value of 0.415 and adjusted R-squared value of 0.399. With the group variable held constant and the pretest score of zero, the intercept term, which indicates the expected posttest score, is statistically significant (p-value = 0.003). This indicates that the model can reliably estimate the posttest scores when considering the effects of the pretest scores and group membership.

Crucially, the interaction term between the pretest score and the group variable is not statistically significant (p-value = 0.394), meaning that there is no discernible difference between the control and observation groups in the link between the pretest and posttest scores.

These results suggest that the pretest score, as a covariate, has a significant influence on the posttest scores, and the corrected model explains a considerable portion of the variance in the posttest scores. Overall, the ANCOVA outcomes provide evidence that the pretest score is a significant predictor of the posttest score, regardless of the group membership (control or observation). The results presented in Table 6, which displays the

Tests of Between-Subjects full factorial Effects, provide last step the analysis of covariance (ANCOVA) conducted on the posttest scores.

Table 6: Tests of Between-Subjects full factorial effects

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	477.205	2	238.603	26.520	.000
Intercept	74.915	1	74.915	8.327	.005
PrT	367.666	1	367.666	40.865	.000
Gro	115.742	1	115.742	12.864	.001
Error	638.795	71	8.997		
Total	8516.000	74			
Corrected Total	1116.000	73			

The corrected model, which includes the pretest score as a covariate and the group variable, clarifies an important portion of the variance in the posttest scores, as indicated by the F-statistic of 26.520 then the corresponding p-value of 0.000, which is less than the usually utilized significance level of 0.05. The R-squared value for the corrected model is 0.428, and the attuned R-squared value is 0.411, suggesting that the pretest score and the group variable account for approximately 41% of the variation in the posttest scores. Importantly, the group variable also has a significant effect on the posttest scores, as indicated by the F-statistic of 12.864 and the corresponding p-value of 0.001. This finding suggests that, even after controlling for the pretest scores, there is a significant difference in the posttest performance between the control and observation groups. Once the initial disparities in the pretest scores have been taken into account, the results indicate that the intervention or alternative treatment received by the observation group may have had a distinct impact on their post-test performance when compared to the control group. Based only on their pretest scores, this suggests that the intervention or treatment may have been successful in raising the observation group's post-test performance above expectations. The outcomes of the independent t-test applied to investigate the differences in pretest and posttest scores between the female and male participants are shown in Table 7.

Table 7: results of independent t-test for gender

	Gendar	N	Mean	Std. Deviation	Std. Error Mean	t	df	Sig.
pre-test	Female	35	9.97	3.240	.548	.331	72	.74

	Male	39	9.72	3.332	.534			2
post-test	Female	35	9.71	3.930	.664	-.593	72	.555
	Male	39	10.26	3.925	.629			

For the pretest scores, the mean score for females was 9.97 with a standard deviation of 3.240, whereas the mean score for males was 9.72 with a standard deviation of 3.332. The t-statistic is 0.331 with a corresponding p-value of 0.742, that is greater than the usually utilized significance level of 0.05. This indicates that there is no statistically significant difference in the pretest scores between the female and male participants, suggesting that the two groups had similar performance on the pretest. Similarly, for the posttest scores, the mean score for females was 9.71 through a standard deviation of 3.930, while the mean score for males was 10.26 with a standard deviation of 3.925. The t-statistic is -0.593 with a corresponding p-value of 0.555, that is also greater than the commonly used significance level.

These results show that there was no statistically significant difference in the posttest scores of the male and female participants, indicating that the performance of both groups on the posttest was similar. The non-significant t-test results imply that neither the pretest nor the posttest scores were significantly impacted by the participants' gender.

There is no indication of a systematic performance difference based on gender in this study, and the observed differences in averages between the male and female individuals can be explained by chance. These findings imply that gender had no discernible impact on the participant's performance on the pretest and posttest measures. The results show that the pretest and posttest scores were comparable for the participants who were male and female.

5. DISCUSSION

The current study looked into how young students in the Iraqi Kurdistan region acquired vocabulary using video games. The results offer insightful information on the possible financial benefits of using video games as an additional learning aid in language instruction. The findings suggest that the group under observation, who received education through video games, demonstrated a noteworthy enhancement in their posttest scores in contrast to the group under control. This suggests that including video games

in the teaching process may help students acquire language more quickly. This is consistent with other studies that have demonstrated how beneficial video games are for language acquisition, especially when it comes to vocabulary growth (Bashori, van Hout, Strik, & Cucchiarini, 2022) (Alexander, 2019).

Because video games are visually appealing and communicative, this could be one reason for the observed improvement in the observation group's performance. Video games can improve learners' attention spans, recall rates, and general vocabulary engagement by fostering a more engaging and immersive learning environment (Sylvén & Sundqvist, 2012). Video games can aid in the consolidation of new vocabulary by incorporating interactive components and providing rapid feedback, which engages learners in an active learning process (Chen & Hsu, 2020).... Regardless of the participants' starting proficiency levels, the non-significant association between the group variable and the pretest scores suggests that the effect of video games on vocabulary acquisition was the same for all of them. According to this research, video games can help language learners of all backgrounds and skill levels acquire a language.

The potential impact of gender on vocabulary acquisition was also investigated in this study. There were no discernible variations in pretest or posttest scores between participants who were male and female, according to the findings. This shows that gender was not a significant factor in the observed vocabulary improvements and that the benefits of video game-based training were relevant to both genders equally.

These results have significant ramifications for language instruction in Iraq's Kurdistan region. They propose that integrating video games into language learning programs can be a useful tactic to enhance young learners' vocabulary development. Teachers may create a more engaging and productive learning environment that meets the diverse needs and preferences of their students by utilizing the alluring and interactive aspects of video games. It is important to recognize the limitations of the current investigation. Although the sample size is enough for the statistical analysis, it can restrict how broadly the results can be applied. Furthermore, the study only looked at vocabulary learning; therefore, future studies might look into how video games affect other language proficiency areas like grammar, reading, or listening comprehension.

6. CONCLUSIONS

To conclude, this study offers significant evidence for the beneficial effects of video games on vocabulary learning in young students in the Iraqi Kurdistan region. The results imply that using video games as a teaching medium can be an effective way to teach language and improve vocabulary acquisition. These findings demonstrate how educators, policymakers, and practitioners can incorporate video games into language learning curricula, making use of the captivating and interactive features of this medium to enhance students' language development.

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