

Implementing Minecraft as a Tool to Teach Vocabulary in a Saudi Intermediate School: An Experimental Study

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Abstract

Utilizing digital games for learning vocabulary can be auspicious. Thus, the current study investigates the potential effectiveness of implementing Minecraft to teach vocabulary. The participants who underwent this study were eighteen students of intermediate Saudi schools in Riyadh. They are 12-13 years old. They were grouped into two groups: the experimental and control groups. The pupils were randomly chosen. Both groups were taught the same vocabulary. While the control group was taught via the traditional methods, the experimental group was taught by using Minecraft. The experiment lasted two weeks before the post-test was carried out. The researcher made an observation sheet to examine students' acceptance of employing Minecraft and their behaviors towards it. The results of the pre-post tests were analyzed through SPSS. The present study's findings revealed a significant distinction in favor of the experimental group, which was taught using Minecraft. In addition, the students exhibited a positive attitude towards Minecraft. Besides, it is desired that teachers support other learning methods, including games that raise creativity and construct a comfortable condition.

Keywords: Language learning, games, edutainment, vocabulary, educational games, Minecraft

1. Introduction

The world of schooling is glimpsing a massive evolution. In all scopes of science, medicine, politics, and the economy, the possibility of comprehending via e-learning is undoubtedly monumental. Thanks to trendy technology, there has been a substantial upward evolution where everything can be attained. Recently, video games have been regarded as one of the most favourable norms of technology among youths and adults. Due to its popularity, educators have greatly interested in converging schooling with amusement (edutainment). The tendency toward edutainment is rapidly increasing. Since learners show interest, motivation, and less stress when they play digital games, multiple studies were conducted to investigate the effectiveness of using digital games for scholastic purposes. Schlimme (2002) has stated, " video games can be utilized to benefit players in several ways, such as through education about important topics." This research examines the effectiveness of implementing Minecraft in teaching English vocabulary. The researcher chooses this game because it enjoys vogue among teens and youngsters.

Moreover, it is the type of game that sustain a collaborative setting and engagement. Numerous studies dealt with Minecraft in mathematics and science. However, almost non-Saudi studies have investigated the benefits of using Minecraft to acquaint terminology.

1.1 Background of the Study

To deliver a sufficient preface regarding digital games, it is worth clarifying what video game is really about. Games have been used exclusively with one aim: to 'delight,' which has been this for many years. Despite this reality, nowadays, games have been utilized in various cases. Educators have given a grand deal of awareness. There is a term called game-based learning which James Paul Gee conceived. James acknowledges that games are efficacious in the learning context.

Moreover, it is significant in that it boosts learners. That being said, the kingdom of Saudi Arabia is witnessing a considerable evolution, especially with the vision of 2030 invented by Crown Prince Mohammed Bin Salman. Although the kingdom is not a multilingual nation, English is being significantly taught in schools' curricula in

all grades. It is taught as a compulsory subject from primary school to high school. Even in college, it is there in each major's plan. English might be challenging for some, particularly for those who have not been linked to Hollywood industries, the recognised programs of the western world. Regardless, games are stylish in Saudi lives. It becomes part of their day-to-day routines. Employing video games in classrooms permits teachers to provide more influence in a pedagogical sense. The vast expansion brought the attention of scientists. Video games can be used for other purposes, and among these, they can help ESL learners improve the four primary language skills of Reading, Writing, Speaking and Listening. Metatron (2017) argued about how he teaches his student through video games to learn a new language. He said any teacher who aims to apply this learning method should ask his student to describe everything they see. For example, he used the well-known game Skyrim to teach his student. He asked them to describe everything they saw. Inside that game is a place called River wood, and his student wrote everything they saw there. He concluded that students became more active with the implementation of video games.

1.2 Statement of The Problem

Learning vocabulary can be demanding, and with diverse ways of learning, a learner can discover a convenient manner to comprehend. With the colossal growth and improvements in the game industries, it would be a decent sentiment to operate games for educational objectives.

Moreover, it is better to combine entertainment with education (edutainment) to catch students' attention. This research examines whether Minecraft could be an alternative method to teach vocabulary.

1.3 The Significance of the Study

The significance of the study stems from the following point:

- 1- To the researcher's best knowledge, this study is one of the few studies that attempt to investigate the implementation of Minecraft as a tool to enhance vocabulary learning.
- 2- The findings of this study would be significant for teachers to use alternative methods of teaching rather than the traditional methods.
- 3- The findings of this study support the term 'edutainment' and provide helpful information about one of the ways to learn and recall vocabulary.
- 4- The current findings would assist the curriculum developers in effectively designing appropriate syllabi to teach vocabulary.

1.4 Purpose of the Study

The objective of the study is to investigate the potential usefulness of teaching vocabulary through Minecraft. It also aims to investigate the attitudes and the perceptions of the male students in Al-Ebtekariah private school, intermediate- grade towards Minecraft in terms of its usefulness and whether they like to learn from it.

1.5 Research Questions

The study aims to answer the following questions:

- 1- Is implementing Minecraft proper tool in enhancing vocabulary learning by students?
- 2- Will, the students in the experimental group, show good attitudes towards learning from Minecraft?
- 3- Will, the students in the experimental group, have a thoughtful way of solving the tasks by using Minecraft to learn vocabulary?

1.6 Hypotheses

- 1- There will be no statistically significant difference between the mean core of the experimental group and that of the control group on the pre-test.
- 2- There will be a statistical difference between the mean scores of students who received their vocabulary learning through Minecraft and those who received their vocabulary learning through conventional methods in favor of the experimental group.
- 3- Students who receive their vocabulary learning through Minecraft will show a positive attitude towards it.

1.7 Definition of Terms

Language: Brown (2002) defined language as: "is a system of arbitrary conventionalized vocal, written or gestural symbols that enable members of a given community to communicate intelligibly with one another".

Vocabulary: Ur (1996) defined it as "the words we teach in the foreign language".

Gaming: Oxford dictionary has defined it as "The action or practice of playing gambling games". This word means anyone who plays certain kinds of games is described as a gamer or someone who does gaming.

Video game: Frasca (2001) defined it as "any form of computer-based entertainment, software, either textual or imagine-based, using any electronic platforms such as personal computer or consoles and involving one or multiple players in a physical or networked environment".

Edutainment: The term edutainment is considered modern, but it has become popular with the improvement of technology in the last two decades. Marget Rousey (2019) defined edutainment as a " new term coinage, similar to infotainment, that expresses the marriage of education and entertainment in a work or presentation such as a television program or a website or a website video game".

1.9 Limitations of the Study

Even though the present study serves well for those who would like to integrate technology with method of teaching, there are some limitations to bear in mind. Moreover, clarifying these limitations would help other researchers to conduct their research differently. The period of conducting this research is short to some extent. That is due to the regulation proposed by the administration of the school board. Another limitation was the number of the control-group and the experimental group is not that numerous. Furthermore, the researcher was only able to select students from the same class (again due to the regulation of the board). In addition, the researcher conducted the study on one gender (males), leaving to a case of gender variation regarding whether it is applicable or not.

2. Literature Review

2.1 Introduction

Ever since the English language became a lingua franca, it has become essential to learn it and consider it a top priority for most countries' educational plans. English plays a vital role in our lives. In non-English speaking countries, learning English has become a must. To date, English is the most crucial language to be learned, ranging from science, business, diplomacy, information technology, and other sub-fields of life's interests and needs. Nowadays, the Saudi environment has undergone many changes from teen years ago. In Saudi Arabia, English is taught at schools and universities and is considered a significant skill to qualify for a job. The availability of finding technology tools is much higher than what it used. There are plenty of resources from which ESL learners can get benefit immensely. One of these resources is games. Around a billion and a half people worldwide play video games. That is more than 20% of the world's population. In the last twenty years or so, digital games have become part of our daily lives. In this regard, it is not surprising that educators and tutors are trying to add this sort of technology to build a collaborative environment in the classroom. Games are significant because they provide opportunities for enhancement in a pedogeological sense. Games are one of the popular entertainments in the 21st century. Digital games have been witnessing significant success in recent years as they developed immensely in terms of geography, plot construction, and their spread worldwide.

2.2 The Importance of Vocabulary Learning

Vocabulary is undoubtedly the most critical in any language. Wilkins (1972) stated that " There is not much value in being able to produce grammatical sentence if one has not got the vocabulary that is needed to convey what one wishes to say." *Vocabulary* can be defined as " a string of words used by people of a certain language (Novriana, 2010). The importance of learning vocabulary represents a bridge to deliver a meaning of a thought. Aribowo (2008) stated that vocabulary is considered the optimal language learning or acquisition component. As Wilkins (1972) once said, " Without vocabulary, nothing can be conveyed". Vocabulary learning is significant because it is the heart of any language. Vocabulary links the skills of language starting from writing, reading, speaking, and listening (Huyen & Nga, 2003). Being rich lexis is a key concept for overall comprehension of communication, whether written or spoken (Nation, 2001; McKeown, 2002). So how is vocabulary learned? Many people might think that learning words stem mainly from the direct teaching of a word in class, whereby the teacher asks to repeat after uttering the word.

Nevertheless, it is broader than this thought (Nation, 2007). There are two significant ways of learning vocabulary. The first of these is learning vocabulary from meaning-focused input (listening and reading). Learning a particular word would occur incidentally through the exposure of listening and reading. This approach is likely in favor of those native speakers of a language. The second is learning vocabulary from meaning-focused input (speaking and writing). That is to say, learning through speaking and writing. (Nation, 2007). As English foreign language learners, we struggle to learn vocabulary, mainly because the traditional teaching method does not give authentic language to be used.

Moreover, repeating back and forth with the teacher seems dull to some. With the vast development in technology, learning vocabulary can be properly enhanced. Applications of smartphones are suitable, but there are good opportunities for digital games. Mcrae and Crystal (1993) stated that vocabulary knowledge is crucial to mastering writing and speaking skills, so the learner should focus on various ways to improve his capacity because they provide opportunities for enhancement in a pedagogical sense. Games are one of the popular entertainments in the 21st century. Digital games have been witnessing significant success in recent years as they developed immensely in terms of geography, plot construction, and their spread worldwide.

2.3 Why the Emphasis on Vocabulary Over Grammar?

The benefits of increasing vocabulary are just too numerous to list, but the quote from Mark Twain (1890) is worth mentioning. He said: "the difference between the right and almost right words is between lightning and lightning bug." Furthermore, the quote of Rupley, Logan, & Nichols, 1998/1999, p. 339): "vocabulary is the glue that holds stories, ideas, and content together... making comprehension accessible for children". The most critical task in language learning is the acquisition of vocabulary (Steve Kaufmann, 2015). Having plenty of words enables the learner to understand what reading or listening is about. It is also believed that vocabulary is much more important than grammar. The issue with grammar learning is that it would be acquired gradually as the learner is exposed to words. As known, vocabulary is the range of artistic, stylistic forms of communication. The more vocabulary is learned; the more effective communication would be. Cameron (2001) stated that "vocabulary learning could be a stepping stone to learning." Vocabulary indeed plays a vital role in learning a language.

2.4 What is Minecraft?

One might ask what this game is precisely before utilizing it for educational purposes? Back in 2009, Minecraft appeared for PC gamers to try out. Minecraft had a unique look. It was more than just a 'game' because it was much more of an experience. What the player does in Minecraft is very much up to him. The basic mechanic is that the player would wander throughout the world and break down resources that a gamer finds, which allows him to build his structures, weapons, etc. Some resources are challenging to find, so exploration is also a core key in this vast world. There are various modes that a player can choose. The most popular is the survival mode, where a player has a life bar in which he must find resources to build and be on the lookout for enemies, such as zombies. Another unique model is the creative mode (this one has been used in this experimental study). This mode gives the player access to all the resources in the game.

Interestingly, people succeeded in building recreations of real-life landmarks or objects from popular fiction. That being said, was Minecraft successful? The answer is yes. In fact, by January 2011, Minecraft surpassed one million purchases. Moreover, Minecraft is considered one of the best-selling video games, with about 60 million copies sold and a hundred million users. It also branched out to consoles, becoming one of the most popular and most played on Xbox and PlayStation online stores.

2.5 Other Majors that implemented Minecraft

In our list so far, we have dealt with studies that tried to implement games to teach language or teach components of language, whether vocabulary, reading, writing, Etc. However, there are different usages that are variant from language teaching or linguistics interests. Mathematics researchers and educators have utilized Minecraft to ease the learning process or smoothen it. Kok Ming (2020) conducted a study to examine the effectiveness of using Minecraft on tech Probability. His study contained pre-test, post-test, and observation. The findings show that Minecraft had successfully played a crucial role in increasing students' performance. He concluded that Minecraft is one of the popular games to support teaching and learning. He also adds: "Minecraft can enhance students' confidence and curiosity, as they work hard to complete the tasks provided in the virtual world." He agrees with Makuch (2014) that implementing systematic teaching and learning tools like Minecraft will positively affect overall learning. William A.J (2016) discussed using Minecart to integrate common core activities. A total of 59 students and three teachers were surveyed. An overwhelming 84% majority of students believe that Minecraft would be a beneficial learning tool. Teachers' interviews seem to follow a similar trend to students' majority responses. He concluded that Minecraft could improve the quality of students learning.

Another usage of Minecraft has occurred in science majors. Laura Hobbs from Lancaster University (2019) indicated that Minecraft was a highly positive, fun, and effective engagement tool used in a science course. They also shed light on students' motivation, claiming that they felt more excited than the control group. Lane, H. Chad (2017) argued for using Minecraft for stem interest development. In her study, results suggested links between Minecraft play and STEM interest. Moreover, the study states that Minecraft reflects an interest in

STEM and influences it as well. Furthermore, Minecraft has been used to teach Computer science, space, and science.

2.6 Related Studies

Ohoud Abdullatif (2016) documented a study to investigate the impact of Video Games and how it is can promote the retention of English vocabulary among Saudi Juniors. She operated two-sample, one representing the experimental group, while the other sample represented the control one, and both samples were from the kindergarten. The researcher gave Video Games the experimental sample from the British Council official site to learn vocabulary, whereas the other controlling sample has been traditionally taught vocabulary. After the end of her experimental period, she analyzed data through ANCOVA for the quantitative data. The result indicated that the experimental group -which taught through Video Games- scored higher than the other group, showing the positive effect of using Video Games in teaching English vocabulary to kids. (Mahmut Kayaalti, 2018) concludes from his research on the Impact of Online Games on Learning Vocabulary that online gaming contributed to language learning more efficiently than rote learning. However, he concludes that it depends on gender, whereas males were better at learning through games than females. (Sarah Bowman) in her book, mentioned that "role-playing games encourage higher-level mental processing abilities" and "provide the opportunity for participants to acquire personal, interpersonal, cultural, cognitive and professional skills." Innovation in learning is exciting and has much potential to expand, though innovation should be approached carefully and connected to clear and specific goals. (Janet, Sam, Marilyn, 2014).

Joan Cooney Center (2014) states that "Making games work in the classroom requires an understanding of issues specific to learning games and the systematic barriers." (Richards, Stebbins, and Moellering, 2013) Some assume that learning models' games lead to learning effectively without being explicitly taught. Others say that games are tedious and time-consuming, while others argue that games may contribute to aggressive arousal and antisocial behaviour. (Mary Ulicsak and Ben, 2010)

Jacqueline Martin (2016) states that playing games are a way of additional language practice, and games can motivate English learning by asking to accomplish a variety of tasks in English. Tekijä (2018), in his theory, examined Finnish students regarding EFL and concluded that many students learned specific vocabulary from playing games, some mentioned that games motivated them to learn English, and some players learned how to write in English to chat with the game, immediate foreign interaction to exchange information was helpful to others, in addition to text-contest understanding. It has been recognized that in-game feedback is beneficial for EFL learning. The survey done by Domas Rudis (2017) tries to find a connection between video game playing and English proficiency. Furthermore, he concludes that there is a strong relationship between video games and language acquisition, especially vocabulary and pronunciation. Video games provide visual cues besides words - to tell the player the name of an object- which is an absence in a book. So mainly, video games provide interaction and motivation to learn and acquire the English language.

In their study, Yip and Kwan (2006) chose 100 intermediate engineering students, and they used the Professional Word Web and the University Word Web to teach vocabulary. The questionnaire results show that; over 70% agreed that online games on the two websites were pleasant, and more than 70% stated that the games effectively built their vocabulary.

They conclude the following:

- Teachers and students consider online games as practical vocabulary learning tools
- Students prefer online games to traditional learning lessons
- Motivating games increase students' interest and guarantee the effectiveness of learning
- Video games and cartoons attract attention and create a non-threatening atmosphere in presenting information, so it has the potential to encourage the thinking process and discussion skills to learn (Clark, 2000). He also mentioned that "Many educators believe that students should construct knowledge through inquiry rather than receiving it passively through textbooks or lectures."

Egenfeldt-Nielsen (2013) stated in one of his essays that games can be a learning method and mentioned edutainment:" A video games which are made to teach a specific skill or knowledge such as a foreign language, mathematics. " This indicates that not all games are just for fun; they may help teach something.

Since the ability of ESL learners to speak the language fluently and with proficiency is related to the amount of vocabulary of learners' capacity, it is fair to say that most worldwide computers are run and developed in English. Abu Bakar and Nonretired conducted a study on Malaysian ESL learners using the famous game SIM 3. They were

curious if this type of game would increase its players with an immense vocabulary. For the record, SIM 3 is a strategic game that emulates the characters' daily lives in the game. A player is responsible for upgrading their way of living, communicating with people, Etc. The study showed that the participants in this study learned vocabulary on average of 116.66 words in a timed span of 6 hours per week over two months. (Abu Bakar and Nosratirad, 2013).

Abu Bakar and Nosratirad (2013) argued that video games are a self-learning tool whereby learners have a basic grasp of the target language (say English). Once this is accomplished and the game goes on, the player's vocabulary will develop, which may increase self-motivation to play the game and acquire the vocabulary.

Schlimme (2002) pointed out that video games give the participants a context to discuss scenarios and outcomes to facilitate their understanding of other concepts. Not to mention it helps child's skills of reading, spelling and pronunciation, and critical analyzing techniques. He also indicated that some video games conclude their dialogue with unfamiliar words that are needed to be explained and defined to the player. Thus, the player's capacity for vocabulary, no doubt, will witness an increase.

DeHaan (2005) stated in her study the role of video games in enhancing listening and reading skills in Japanese. She results that, indeed, Video games enhance one's skills of reading and listening. She also added that any video game's repetition, contextual clues, controllability, and simultaneously presented aural and textual language all contribute positively to language learning.

Brett (2001) pointed out that the natural repetition that is given in video games (such as the interactive menus or the settings) gives the learner more opportunities for language acquisition to have occurred, unlike media (movies& Books), as these two do not often use the same vocabulary or grammar for a lot of times. Thus, the acquisition process is less than what happens in video games.

Hulstijn & Laufer (2001) pointed out in their essay that language acquisition can be made at the level of involving tasks to the learner. Since video games often have aural and textual language, a gamer would face many tasks inside the game, enabling him to acquire more of the language.

Gee (2005) argued the idea that people see video games as nothing but a tool of entertainment while others might see them as useless and with a bad influence on whom they use them. He said, "video games are a new form of interactive media worthy of multidisciplinary academic study" regardless of what video games may be, it is a well-known fact that they are a distinct yet entertaining way for youngsters to spend their time."

Uberman (1998) declares that games make students encourage, entertain, teach and promote fluency. She affirms that games give chances for students to feel the beauty of a foreign language.

Playing games is a crucial aspect of children's development. The children's creativity is better to be nurtured with opportunities to play and exercises in which their creative abilities are enhanced and extended (Singer, Golinkoff, Hirsh-Pasek 2006).

Adding games in the classroom is not considered a luxury, nor is it a waste of time. Integrating games into a language classroom activity is advantageous. (Vale& Feunteun, 1995). Employing games in the classroom is profitable for many reasons. First, it enhances the student's ways of social interaction, such as asking questions and disagreeing politely (Jacobs & Kline Liu, 1996). Second, games have the vantage of creating a relaxed and enjoyable atmosphere in the classroom (Vale & Feunteun, 1995; Nga & Huyen, 2003). Third, it is attractive and could have a student-centred model, which education programs ought to have (Elkind, 2007).

Children in a student-centred model (which can be created by using games) are believed to do better on reading, writing, and mathematics tests. Children learn while they play, and those engaged in playful learning do better in an academic setting than those who play less (Pasek & Golinkoff, 2008).

Hadfield (1985) stated that " games should be regarded as an integral part of the language syllabuses. Games, when used for educational purposes, can integrate fun with education.

Sudarmaj, imam, and Danu Yusuf (2021) found that students mean score in the experimental group was higher than in the control group. Moreover, he concluded that Minecraft could improve the students ' learning. He also added that the student's reaction to the Minecraft application was much better than that of the conventional group. His survey also indicated that using Minecraft resulted in learning a more accessible, faster, and more exciting-happier process.

Klimova (2015) discussed in his paper whether games could be used as a tool in teaching English. He argued that the world of games has now evolved, and thus, it can be used as a new way of teaching. Moreover, he shed light on the idea that games give excitement, and thus students would be eager to participate.

Uberman (1998) states, " Games encourage, entertain, teach, and promote fluency and communicative skills. If not for these reasons, they should be used just because they help students see beauty in a foreign language and not just problems that at times seem overwhelming".

Ibrahim, Abdelrazig (2017), in his study (*Advantages of Using Language Games in Teaching English as a Foreign Language in Sudan Basic Schools*), argued for the approval of educators to utilize games as a teaching method. He admits that games might be challenging to be used, especially in education, but they should not be. He also adds that games have proven useful as an anti-stress and anxiety, fun, and engaging. Furthermore, it builds collaborative learning and helps students jump in and participate psychologically and socially. In his study which he adopted the quasi-empirical method, it was proven that games are helpful in EFL learners because of their positive impact on students' output in the English language. Finally, he recommended that curriculum designers and educators include sufficient language games in the syllabus so that students feel motivated and courageous.

AlNatour, Amal Shehadeh, and Dima Hijazi (2018), in their study "*The impact of using electronic games on teaching English vocabulary for kindergarten students.*", found out that the population of their study considers games in learning vocabulary as relaxing and motivating to learn. Moreover, games enable the pupil to be active in a pleasant manner as it assists them in learning and keeping new words more easily. More importantly, games aim to teach vocabulary and bring real-world context into the classroom.

3. Methodology

This section reviews the method of the study. Moreover, it would specify the sample of the study, clarify some information and how the procedure was conducted as well with how the data were analyzed.

3.1 Nature of the Study

This study used the scientific method, which is the experimental design. Muijs (2004) defined the experimental design as: " a test under control conditions that is made to demonstrate a known truth or examine the validity of the hypothesis." The assumption is that Minecraft is the hypothesis, and it is regarded as a tool to teach vocabulary. To explore the effect of Minecraft on students, the researcher used an experimental design to report the findings. This part describes the population, procedure, researcher's role, and statistical analysis.

3.3 Research Variables

Independent variable: implementing Minecraft to teach vocabulary

Dependent variable: The students' vocabulary mastery.

3.4 Researcher's Role

The researcher played the role of an observer and facilitator.

3.5 Methods

This research was conducted at Al-Ebtekariah intermediate- private school, Riyadh, Saudi Arabia. The study was conducted with the approval of this institution. This study used an experimental method. The participants were divided into two groups. Experimental- Group and control-Group. At first and before the experimental activities were carried out, both groups were given a pre-test to measure their performance. Three weeks later, the two groups were given a post-test to measure their performance to compare the significance of the implementation of Minecraft compared with traditional methods of teaching.

Moreover, while the experiment was proceeding, the researcher observed the overall students and their behavior, attitude, and acceptance of Minecraft in a learning context. The independent variable (also called the treatment, the intervention, or the variable that is being manipulated) is implementing Minecraft. On the other hand, the dependent variable is the students' mastery of vocabulary.

3.5.1 Sample Population

The sample population consisted of eighteen male students in the first grade of the intermediate- private school of Al-Ebtekariah institution, Saudi Arabia. The class was then divided into randomly chosen groups, the Control Group (CG) and the Experimental Group (EG). Each group consists of nine students. The students were asked to solve multiple-choice questions in the pre-test and post-test to assess their comprehension (10 marks). CG and EG were taught separately by two teachers. The CG group was taught using the direct way as well as the silent way. On the other hand, the EG group was taught to use Minecraft only, respectively, for a duration of two weeks.

3.5.2 Validity and Reliability

Multiple-choice items ensured the validity of the pre-test and post-test. A competent teacher who holds a Ph.D. in CLIL (Content Language Integrated Learning) has approved submitting both pre-test and post-test. The test is practical in that it stayed within appropriate time constraints (30 minutes). It is also reliable and consistent, and if it was given to other students on two different occasions, the test would yield similar results. The post-test is valid because it assesses the objectives of what has been taught. The paired t-test on SPSS was carried out to find any significant differences in the mean scores between the results of the pre-test and post-test of vocabulary mastery.

3.6 Data Analysis

This experimental study used SPSS to analyze the data from the pre-test and post-test. The statistical package for social science is significant in that it makes a difference between two or more groups. Moreover, it provides the readers with showing a number of facts in a statistical manner.

4. Findings & Discussion

This section aimed to discuss the results of the field study and the proposed recommendations in light of those findings.

4.1 Data Collection

The data in this study is collected and analyzed in order to see if Minecraft has helped as a tool to teach vocabulary. The methodology consisted of pre-test, post-test, and the researcher's own observation. The data was useful in that it helped the researchers to answer the research questions.

4.1.1. Pre-Test and Post-Test Collection

Both the pre-test and post-test consisted of ten questions with answering items from three to four per one question

4.1.2 Observation of the researcher

With pre-test and post-test being analyzed by statistical software, the observation of the researcher cannot be analyzed through tests and software. Instead, the researcher has designed a daily document to mark students' enjoyment, eagerness to participate, and motivation.

4.2 Data Analysis

This experimental study used SPSS to analyze the data from the pre-test and post-test. The statistical package for social science is significant in that it makes a difference between two or more groups. Moreover, it provides the readers with showing a number of facts in a statistical manner.

4.3 Validity of the Study Tool

Pearson Coefficient was calculated in order to identify the validity of the study tool; whereas the correlation coefficient was calculated between every item and the total degree of the test, as on the following tables:

Table 1. Pearson Correlation for the items of (using Minecraft to learn vocabulary) with a total degree of test

Items	Pearson Correlation	Items	Pearson Correlation
1	0.630**	6	0.653**
2	0.647**	7	0.427**
3	0.506**	8	0.574**
4	0.541**	9	0.424**
5	0.647**	10	0.679**

** . Correlation is significant at the 0.01 level

Table 2. Pearson Correlation for the sub-dimensions of (using Minecraft to learn vocabulary) with a total degree of test

Items	Pearson Correlation
vocabulary size	0.948**
described vocabulary	0.724**
word context	0.737**
comprehension	0.630**

****.** Correlation is significant at the 0.01 level

Tables (1 - 2) show that all the statements and sub-dimensions are significant at the level of (0,01), person correlation coefficients for sub-dimensions estimated between (0.630 – 0.948), this refers to the high internal consistency as well as high and adequate validity indicators that are trusted when applying the current study.

4.4 The Reliability of the Study Tool

To check the reliability of the study tool, the researcher used re-test, as follows

Table 3. retest for measuring the study tool stability

Dimensions	Pearson Correlation
vocabulary size	0.724**
described vocabulary	0.718**
word context	0.750**
comprehension	0.812**
Overall reliability	0.836**

Table (3) shows that the study test enjoys statistically acceptable stability. The total stability coefficient value (Pearson Correlation) amounted to (0.836) which is a high degree of stability and trustful when applying the present study.

4.5 The Equivalent of Groups

To find out groups Equivalent, Mann Whitney test was used between the mean scores of the two: experimental and control groups in the pre-test, as shown in Tables (4) as follows:

Table 4. Mann Whitney test results of pre-test concerning the differences between the mean ranks of both the experimental and control groups

	Groups	N	Mean rank	Sum of ranks	Z	p. value
vocabulary size	Pre – control	9	8.83	79.50	0.547	0.584
	Pre - experimental	9	10.17	91.50		
described vocabulary	Pre – control	9	11.00	99.00	1.534	0.125
	Pre - experimental	9	8.00	72.00		
word context	Pre – control	9	10.39	93.50	0.848	0.396
	Pre - experimental	9	8.61	77.50		
comprehension	Pre – control	9	10.00	90.00	0.470	0.638
	Pre - experimental	9	9.00	81.00		
Total	Pre – control	9	9.50	85.50	1.0	0.999
	Pre - experimental	9	8.83	79.50		

Table (4) shows that there are no statistically significant differences between the mean scores of the two experimental and control groups in the pre-test for their test total scores and sub-dimensions (vocabulary size - described vocabulary - word context - comprehension), The value of significance level was (0.584 – 0.125 – 0.396 – 0.638) and (0.999) for test total score, which is greater than (0.05), this means that it is not statistically significant. The previous result indicates that there is consistency between the two experimental and control groups in the pretest.

4.6 The Statistical Methods That Used in the Study

To achieve the objectives of the study and analysis the data that were collected, the researcher used many appropriate statistical methods by using Statistical Package for Social Sciences (SPSS) edition (21), the statistical methods were used as follows:

1. Pearson Correlation to calculate the validity and reliability of the study tool.
2. Mann-Whitney test for the differences in the test total scores and sub-dimensions between control and experimental groups in (pre and post-test).
3. Wilcoxon test for the difference in the differences in the test total scores and sub-dimensions between in (pre and post-test) for the experimental group.

4.7 Answering the Research Questions

The purpose of this section is to describe the results of the study which was designed to investigate the implementation of Minecraft as a tool to enhance the sub-skill of vocabulary learning. A statistical package for the social sciences (IBM-SPSS®) (version 25.0) was used for statistical analysis. Inferential analysis (Mann-Whitney test and Wilcoxon) were used in this study.

4.7.1 First question: There will be a statistical difference between the mean scores of students who received their vocabulary learning through Minecraft and those who received their vocabulary learning through conventional methods in favor of the experimental group?

To find out, the difference between the mean scores of students who received their vocabulary learning through Minecraft and those who received their vocabulary learning through conventional methods, Mann-Whitney test was used, as shown in Table (5) and as follows:

Table 5. Mann-Whitney test for the differences between the mean scores of students who received their vocabulary learning through Minecraft and those who received their vocabulary learning through conventional methods

Sub-dimensions	Groups	N	Mean rank	Sum of ranks	Z	p. value	Eta Squared
vocabulary size	Post- control	9	5.33	48.00	3.425	0.001	0.663
	Post - experimental	9	13.67	123.00			
described vocabulary	Post- control	9	7.00	63.00	2.291	0.022	0.309
	Post - experimental	9	12.00	108.00			
word context	Post- control	9	5.50	49.50	3.534	0.001	0.667
	Post - experimental	9	13.50	121.50			
comprehension	Post- control	9	7.50	67.50	2.204	0.028	0.286
	Post - experimental	9	11.50	103.50			
Total	Post- control	9	5.00	45.00	3.637	0.001	0.789
	Post - experimental	9	14.00	126.00			

The results shown in table (5) indicate that there were statistically significant differences between the mean scores of students who received their vocabulary learning (vocabulary size) through Minecraft and those who received their vocabulary learning through conventional methods in post-test, in favor of students who received their vocabulary learning (vocabulary size) through Minecraft (experimental group) with mean rank (13.67) compare to (5.33) for students who received their vocabulary learning through conventional methods (control group). The previous results indicate that there is an effect of the Minecraft method on students' vocabulary size.

As shown in Table (5), the value of the ETA square concerning the results of the differences between the mean scores of students who received their vocabulary learning through Minecraft and those who received their vocabulary learning through conventional methods in the post-test was (0.663). We can notice that it is surpassed the value which indicates the educational importance of statistical results in psychological and educational research whose value is (0.14) (Murad, 2000, 248). This means that the Minecraft method affected students' vocabulary size.

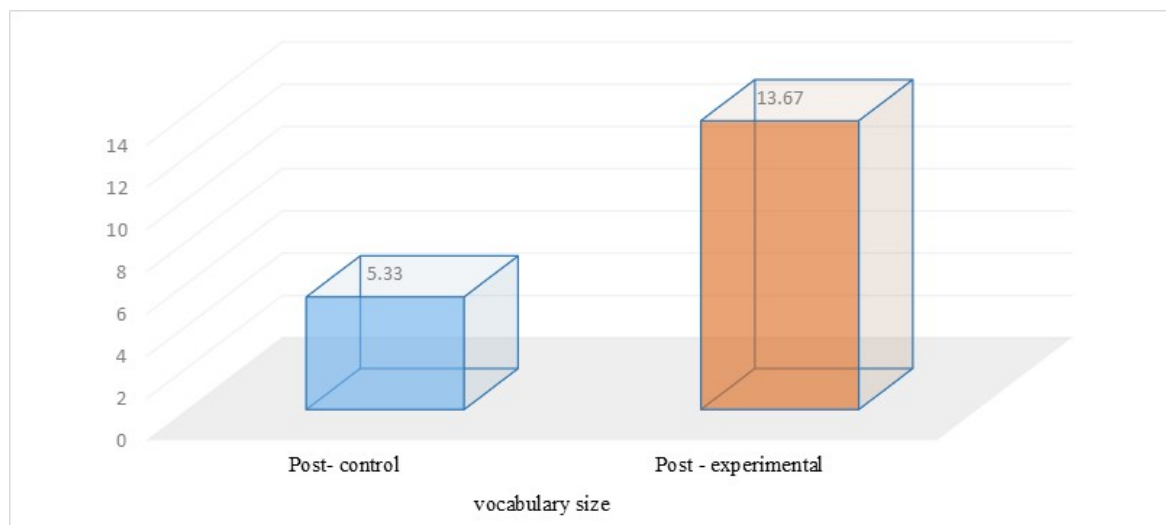


Figure 1. mean of control and experimental group in the post- test related to (vocabulary size)

In addition results shown in table (5) indicates that there were statistically significant differences between the mean scores of students who received their vocabulary learning related to (described vocabulary) through Minecraft and those who received their vocabulary learning through conventional methods in post - test, in favor of students who received their vocabulary learning (described vocabulary) through Minecraft (experimental group) with mean rank (12.0) compare to (7.0) for students who received their vocabulary learning through conventional methods (control group). The previous results indicate that there is an effect of the Minecraft method on students described vocabulary.

As shown in Table (6), the value of the ETA square concerning the results of the differences between the mean scores of students who received their vocabulary learning related to (described vocabulary) through Minecraft and those who received their vocabulary learning (described vocabulary) through conventional methods in the post test was (0.309). We can notice that it is surpassed the value which indicates the educational importance of statistical results in psychological and educational research whose value is (0.14) (Murad, 2000, 248). This means that Minecraft method affected students described vocabulary.

4.8 Discussing the Results

The study reached many results, and the following points illustrate, discuss and interpret these results, as follows:

The results showed that there were statistically significant differences between the mean scores of students who received their vocabulary learning (vocabulary size - described vocabulary - word context - comprehension) through Minecraft and those who received their vocabulary learning through conventional methods in post-test, in favor of students who received their vocabulary learning through Minecraft (experimental group), these results indicate that Minecraft method affected student's vocabulary (vocabulary size - described vocabulary - word context - comprehension)

4.9 The Observation

During the operation of the experiment, the experimenter observed that the level of excitement of the pupils was remarkably higher than those who obtained the lessons using the traditional methods. Moreover, it can be seen that failure is not a scary thing for students to make due to the idea that they are having merriment, so students do not feel that they are being judged when they solve a task. So, it is true that students are satisfied when they make errors. On the other hand, students who were introduced via traditional methods have the sensation that failure is being stigmatized. The researcher also noticed that students are more engaged with each other, resulting in a collaborative environment. Even more, interestingly, five of the pupils stated that music, geography, and manner of solving the tasks were suitably supportive of making the learning vitally flowing. The researcher thought that he would toil to teach the students how to play appropriately, but because Minecraft's popularity skyrocketed over the years, it was found that all the students knew how to play it. This was helpful in that it saved time indeed. Apart from learning vocabulary, they are skills to be learned when using Minecraft. Skills like empathy, social sentiments, and cleverness. Students had to work together, had to collaborate, had to

understand each other's strengths and weaknesses, and support each other. When a game is flexible enough to integrate learning with a specific aspect, a game that students are enthusiastic about, when it is brought into an educational setting with context, curation, and reflection that a teacher can help to provide, extraordinary things can happen. Games help uphold the learning delight and provide educators with a novel method to bond with students.

5. Conclusion

In conclusion, this research sought to explore the effectiveness of implementing Minecraft to teach vocabulary. The findings indicated that games are not only for delight but also to enhance the curriculum and deliver lessons. Besides, the current study's findings showed that students who took vocabulary lessons using Minecraft achieved higher than those who used conventional teaching approaches. This is not surprising since most students regard games as part of their daily routine. Accordingly, the motivation factor is worth noting as the researcher observed that the students felt more engaged using Minecraft than those who used the conventional methods. At the end of the experiment, the students in the experimental group asserted their excitement, treasuring the experiment that they were exposed to and declaring that it promoted their cognitive presence.

5.1 Recommendations

Plenty of games can promote one's language or sweeten it in the four skills of reading, writing, speaking, and listening. The results and findings of this research were only drawn from Saudi pupils at one of the private institutions located in Riyadh, so the outcomes and findings might be distinct if applied to other ethnicities. Likewise, the findings were gathered by executing only Minecraft, so it might be different if the experimenter employed a different game. Therefore, the researcher's proposal for those inquisitive about pursuing further investigation is to involve a study of students of different races, gender, and backgrounds and correspond the upshots to the results of this research. It is also worth citing that the experimental study was done on students whose ages range from twelve to fourteen, so it is suggested that those who desire further study apply it to other types of individuals (grown-ups or youths).

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