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Asma Meftah

Title

The Implementation of Educational Language Digital Games to Enhance Vocabulary Acquisition

Case Study of Third Year Learners at Alia Ali Ben El-Ammari Middle School Sidi Ghezal-Biskra

Dissertation Submitted to the Department of Foreign Languages as Partial Fulfillment of the Requirements for the Degree of **Master in Sciences of Language**

Board of Examiners

Dr. Bashar Ahmed	MCA	Biskra	Chair
Dr. Betka Rezig Nadia	MCA	Biskra	Examiner
Dr. Amraoui Khaled	MAA	Biskra	Supervisor

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Dedication

This humble work is dedicated to :

My parents

whose constant love and support I could never repay in a lifetime.

My one and only sister, Hiba

who accompanied me and guided me throughout my life

My two brothers, Sayeh Karim and Sami

who always cheered me on and made me laugh the most

My Friends Ahlem and Rokaia

For rooting for me

My beloved pupils of MS4, MS3 and MS1

Gratitude, my dear boys and girls, for making this work possible

Gravitas...

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Abstract

Vocabulary acquisition is widely acknowledged as the cornerstone of learning a second or foreign language. In light of this, our study aims to investigate the effectiveness of implementing educational language digital games to enhance vocabulary acquisition, as well as their impact on students' motivation to learn such skills. Therefore, it is hypothesized that educational language digital games are effective to enhance vocabulary acquisition. To test the hypotheses, a quasi-experimental design has been utilized, in which a group of 36 third-grade pupils at Alia Ali Ben El-Ammari Middle School in Sidi Ghezal, Biskra, are exposed to pre-test, training, and post-test sessions. Additionally, a questionnaire has been administered to middle school teachers and inspectors. The results of the study have confirmed the hypotheses across the selected level. Specifically, it is found that educational language digital games have a significant influence on enhancing pupils' vocabulary acquisition.

Keywords: Educational language digital games, Vocabulary acquisition, EFL learners, Effectiveness, Motivation.

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List of Abbreviations

COTS	Commercial-Off-The-Shelf
DGBL	Digital Games Based Learning
EFL	English as Foreign Language
FL	Foreign Language
MS	Middle School
Ls	Learners
SL	Second Language
VLS	Vocabulary Learning Strategies

General Introduction

1. General Introduction

2. Background of the study

In the process of ELT, the aim is to teach the four language skills in an interactive manner. Both receptive and productive skills require a certain capacity of vocabulary. Although vocabulary is considered the main step of mastering language, EFL learners still face some difficulties in uttering simple sentences.

In regards to the importance of speaking in EFL, learners are required to use words as part of their learning process for a variety of reasons. Therefore, teachers are asked to provide a proper way to acquire vocabulary for their learners.

3. Statement of the problem

From a middle school teacher's perspective, it is noticed that EFL learners face some obstacles during their reading and writing session. Alia Ali Ben ElAmmari Middle School pupils of third year struggle to produce a written passage or even a spoken discourse. During their oral sessions, they are highly motivated to participate. However, they quickly get distracted due to their poor vocabulary. Therefore, the effectiveness of implementing educational language digital games to teach vocabulary is questioned.

4. Significance of the study

The study will provide support to middle schools' EFL teachers. It tackles the significant lessons in English Language Curriculum with the attention directed to both teachers and learners. Moreover, teachers who include games in their classrooms reach their learning objective easily. Learners who are engaged with the provided material will be able to acquire the language more accurately, effectively, and confidently. Furthermore, games foster the

overall atmosphere of the classroom and encourage interaction that represents the basic competence of cross-curricular competency.

5. Research questions

In the current study, we intend to address two questions mainly:

- What are the challenges and difficulties facing middle school learners while acquiring new English language vocabulary?
- Can educational language digital games be a tool that helps EFL learners overcome these challenges in acquiring vocabulary of English language?

6. Research hypothesis

- It is hypothesized that the implementation of educational language digital games is effective to teach vocabulary in middle school.
- It is hypothesized that the implementation of educational language digital games is not effective to teach vocabulary in middle school.

7. Aims of the study

This study aims at shedding the light on the significance of implementing educational language digital games to enhance EFL proficiency. Also, it aims to create an engaging classroom atmosphere in which learners are motivated and involved.

8. Research methods

8.1 Sample

The population of this work is third-year pupils of Alia Ali Ben EL Ammari Middle School in Sidi Ghezal, Biskra. A probability sampling is opted for selecting the participants. 36 pupils of third year middle school pupils are randomly selected among 2 groups. The

English teachers from the same school and the appointed inspector of District 2 in Biskra have taken part of this study.

8.2 Research tools

A mixed method is opted in the study.

8.3 Data collection and analysis

To collect data for the inquiry, a teachers' questionnaire is distributed to middle school teachers and inspectors. Moreover, a quasi- experiment is designed for 3MS learners.

8.4 Structure of the study

The undertaken study is of two main parts: a theoretical part and a practical part. The theoretical part contains two chapters. The first section tackles a general overview of vocabulary definitions, types, etc. The second section defines games, their importance and the measurement of choosing games in an educational framework. The practical part contains the description of the data gathering tools, analysis and results.

Chapter One:

Literature Review

Chapter One: Literature Review

1. Introduction

It is common that vocabulary is the basis of any language. People unconsciously use hundreds and thousands of words to communicate, making vocabulary the building block of any language. Learning new vocabulary is essential to understanding and mastering a language, as it forms the basis of communication. Acquiring the vocabulary of a foreign language can be challenging, especially if the target language has an extensive lexicon. Even native speakers sometimes struggle to find the right word.

This chapter focuses on the theoretical framework of vocabulary definition and aspects. Moreover, it tackles the implementation of digital games as a pedagogical tool to enhance vocabulary acquisition in English as a Foreign Language (EFL) setting.

2. Section One: Vocabulary acquisition

2.1 Definition of vocabulary

The four language skills are linked together through vocabulary. Thus, vocabulary has been defined in various ways.

Vocabulary is the total number of words in a language; all the words known to a person or used in a particular book, subject, etc; a list of words with their meaning, especially one that accompanies a textbook (Hornby, 1995, p.1331). In other words, Edge (1993, p.27) has stated that knowing a lot of words in a foreign language is very important. The more words one knows, the better his understanding or making himself understood is. In this light, McCarthy (1990, p.13) defines words as “freestanding items of language that have meanings”.

2.2 The importance of vocabulary in EFL classroom

Since vocabulary is at the preface of language, it is crucial in learning. However, language learners and language teachers pay less attention to vocabulary compared to other language forms. Recently, the communicative language approach started to give enormous significance for vocabulary learning in EFL. It highlighted the communicative value of vocabulary. Therefore, it is important to note that the key to master a foreign language is mastering its vocabulary.

Richards and Renandya (2002) have stated that vocabulary is of a crucial role in EFL and language proficiency. Thus, it affects the four language skills. Brown (2001) has also emphasized the role and importance of vocabulary. He has argued that vocabulary should be labelled as a vital element of language learning and much attention should be given in the practice of EFL in order to improve vocabulary's mastery of learners.

Simply put, "without grammar very little can be conveyed, without vocabulary nothing can be conveyed", (Thornbury 2002, p.13). That is, the more words known by a language learner; the more advantages s/he will have in the language classroom.

2.2.1 Types of vocabulary

Nation (2000, p.15) has distinguished four types of vocabulary:

High frequency words, academic words, technical words and low frequency words.

2.2.1.1 High frequency vocabulary

Nation (2000, p.23) has noted that high frequency words can be categorized in a small group. However, those words are of a significant importance and they cover a wide amount of running words in both spoken and written passages. Moreover, high frequency words exist in all language forms.

2.2.1.2 Specialized vocabulary

Specialized vocabulary covers both academic and technical words. Thus, it is possible to have special vocabulary for different purposes. For instance, there are special words for speaking, special words for reading and others for writing. Technical words can be referred to as jargon words or register. In the other hand, academic words are more of language form. That is, academic vocabulary is the use of formal language rather than the use of technical terms.

2.2.1.3 Low frequency vocabulary

As the name suggests, low frequency vocabularies are rarely occurring and they are not used frequently. Also, they are of a small proportion of any text.

2.2.2 Elements in teaching vocabulary

Thornbury (2002) has stated that mastering vocabulary is related to a comprehensive knowledge of the vocabularies. This knowledge includes the meaning, the spoken and written forms, the grammatical behaviour, collocation, register of the word – spoken and written, the connotation or association of the word along with the word frequency. Furthermore, there are some basic elements in the study of lexis according to McCarten (2007, p.03). Those elements are as follow:

2.2.2.1 Frequency it refers to which expression and word (noun, verb, etc) is more frequent and which is not. That is, some words occur more often than other words. For instance, the word “**yeah**” is used more frequently than the word “**yes**”. Also, there are verbs that are commonly used. These verbs are to know, to think, to go, to get and to mean.

2.2.2.2 Differences in speaking and writing as it is stated before, spoken and written discourse have different vocabulary. That is, some words are more appropriate for speech whereas some are more adequate in written one.

2.2.2.3 Context of use it is closely related to the appropriateness of word’s use. Different situations and different participants require certain vocabulary. It is related the use of formal and informal language.

2.2.2.4 Collocation Harmer (2001, p.20) defines collocation as “the way in which words co-occur combination which, through customs and practice, have come to be seen as normal and acceptable”. It refers to the possible combination of words. Moreover, collocation is two words that are used together. Some terms collocates better with one term than other terms. The table below shows some possible collocations.

Table1

Possible collocations

Right collocation	Wrong Collocation
➤ Fast food	➤ Quick food
➤ Game over	➤ Game end
➤ Toss a coin	➤ Throw ball
➤ Save time	➤ Gain time

Grammatical patterns it focuses on the concordance or what McCarten (2007) calls “the grammar of vocabulary”. It helps with verb complements such as objects or infinitive verbs. He (2007) has provided the figure below for further explanation.

Figure1

Grammatical patterns

<i>Requests</i>	<i>Example</i>
Do you mind + . . . ing	<i>Do you mind helping me for a second?</i>
Would you mind + . . . ing	<i>Would you mind helping me for a second?</i>
<i>Asking for permission</i>	<i>Example</i>
Do you mind + if	<i>Do you mind if I leave early today?</i>
Would you mind + if	<i>Would you mind if I leave (or left) early today?</i>

Note. The figure above exemplifies the grammar of vocabulary. It is suggested by McCarten (2007).

2.2.2.5 Strategic vocabulary it refers to the vocabularies or expressions used to organize a sentence strategically by writers such as conjunctions. Expressions like in sum, in short or adverbs like first, second are used to order and list ideas in a paragraph or a text.

2.2.3 Aspects of meaning in teaching vocabulary

Ur (1996, p.61) argues that real life situations are represented by the meaning of words. i.e. The word meaning allows us to access to its appropriate function and application in a given context. In the other hand, meaning has many aspects of its own. Some aspects of meaning are listed by Ur as follows:

2.2.3.1 Denotation and connotation

Denotation refers to the literal meaning of the utterance. That is to say, it is the word's dictionary definition. To illustrate, the word *sick* is used to describe the state of being ill. In the other hand, Ur (1996) has defined connotation as "the association, or the positive or negative feelings it evokes which may or may not be indicated in dictionary". For example, one connotation of the word *sick* is something impressive such as he has some sick moves. Connotation may be related cultural or social norms. That is, a word may be used casually in a given society while it is banned in another.

2.2.3.2 Synonym and antonym

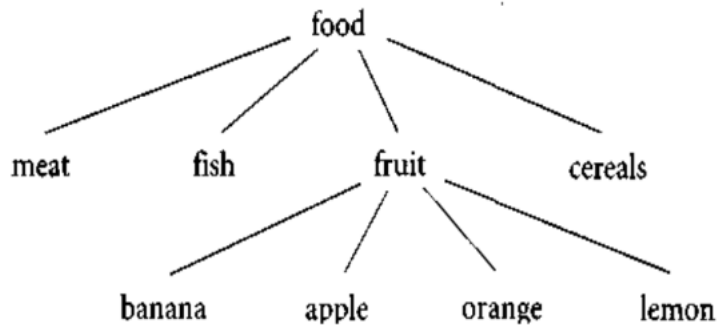
Thornbury (2002, p.09) states that a synonym means a set of words with a similar meaning such as the words brave, courageous, fearless and dauntless share or are close to one meaning. Antonyms are defined by Thornbury (2002) as a list of words that are opposite in meaning. For instance, the words wide, large, vague are contradicted with the word narrow. Therefore, Learners can obtain more than one vocabulary using synonyms and antonyms.

2.2.3.3 Hyponymy and super ordinate

Ur (1996, p.62) refers to hyponymy as a group of words whose meaning is included in that of another words. That is to say, it denotes the subcategory of a more general term. It is a top down process. Whereas, super ordinate is a bottom up process in which general concepts cover a more particular one. In this line, Harmer (2001, p.19) exemplifies both concepts in the following figure:

Figure2

Hyponymy and super ordinate



Note. This figure is suggested by Harmer (2001,p.19).

2.2.3.4 Context and appropriateness

Despite the vital importance of the word's meaning in teaching vocabulary, the how, what and where to use that word are more essential. All the aspects of meaning stated above are not arbitrarily used. Teacher should be aware of the context and appropriateness use of the word. In the line, Thornbury (2000, p.09) affirms that word synonyms can be distinguished easily because they share the same meaning. However, context is vital to decide which meaning is more powerful and appropriate. For instance:

- This is my old friend.

- This is my vintage friend.

The examples above illustrate that despite the words *old* and *vintage* being synonyms and can be used interchangeably, the word *vintage* is not appropriate to the sentence's context. Therefore, the word *old* is more powerful and appropriate. Furthermore, other aspects of meaning such as antonyms are also restricted to context.

In this line, Nunan (1993, p.07) refers to context as a given situation in which spoken and written discourse are imbedded. Context is the driving force that decides the use of word within a

given framework and for that teachers are responsible for selecting the appropriate words that correspond to the context of use. As a result, learners will be able to comprehend both the meaning and its function.

2.2.4 Principles of teaching and learning vocabulary

2.2.4.1.1 Vocabulary teaching

In an EFL classroom, teaching vocabulary is bounded to a number of principles. According to Nation and Moir (2008) list three main principles in teaching vocabulary namely:

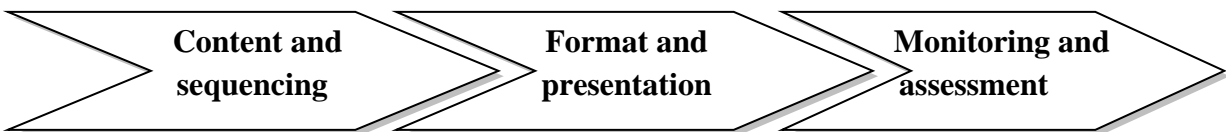
- **Content and sequencing:** is the first principle. In this step, vocabulary teaching strategies and frequency of words are very important and teachers' attention should be directed to them. That is, the selection of words should be relevant to the objective, age, level of the learner as well as his needs. For example, teachers in the field of economics need to teach their learners frequent vocabulary used in that context such as *finance, fund, loan, budget, currency, consumer and deposit*. Moreover, word classes such noun, verb and adjective should be taught moderately to enable learners to use language in a variety of situations and be more productive and confident in it.
- **Format and presentation:** it represents that meaning has priority over format. That is, the objective of word frequency is to communicate more fluently and accurately, therefore, teachers are concerned more about the output rather than structure. In addition, learners are provided with a chance to acquire vocabulary knowledge in depth. Learners should be involved in a variety of activities that are based on real life situations such as dialogues, role plays and games. According to Harris and Snow (2004, p.90), "vocabulary teaching requires opportunities for frequent practice". Teachers, in the other

hand, are required to be well equipped with materials such as data show, flashcards and so on.

- **Monitoring and assessment:** it is considered as the outcome of the previous features. To check whether learners has reached a given objective or not, teachers assess learners to check the process. In this vein, Shmitt (2008) clarifies that testing vocabulary can be in form of filling gaps activity, picture labelling or multiple choice. Consequently, assessment enables teachers to measure students' progress and their objective accomplishment. Hence, assessment is a measurement tool in vocabulary learning. It measures both strengths and weaknesses of the students. Those three principles are summed up in the shape below:

Figure3

Principles of teaching vocabulary EFL classroom



2.2.4.1.2 Vocabulary learning

As it has been stated previously by Thornbury (2002, p.13), “Without grammar very little can be conveyed, without vocabulary nothing can be conveyed.” Hence, EFL learners at the basic level tend to use *labelling*. It is the act of referring to things by labels or names. For instance, a child will know that a dog is a four legged animal and will refer to all the animals such as a cat or sheep as a dog. However, the child will later know that the concept of dogs covers one type of animals and that there are other types. Instead, he will use dog to refer to his toy dog, their neighbour’s dog, or even a drawing of it. Then, the learner acquires *categorizing*

skills (Thornbury, 2002). It is a network building which permits the learner to build complex ideas. They will be able to that realize other words such as synonyms and antonyms and others during this process.

In sum, vocabulary teaching aims at enabling learners to understand the concepts of unfamiliar words, gain a greater number of words, and use words successfully for communicative purposes (Cahyono and Widiati, 2008).

2.2.5 Challenges and difficulties in teaching and learning vocabulary

Meara (1980) states “...*learners themselves readily admit that they experience considerable difficulty with vocabulary*”. That is, there are some obstacles when it comes to the process of vocabulary acquisition. Intaraprasert (2004) emphasizes that the main goals of vocabulary learning are:

- 1) To discover the meanings of a new words;
- 2) To retain the knowledge of newly-learned words; and
- 3) To expand the knowledge of English vocabulary.

However, the process of learning vocabulary presents learners with a number of challenges. Moreover, Thornbury (2004, p.27) states that the most common difficulties in vocabulary learning can be summed in:

- **Pronunciation** Research shows that words that are difficult to pronounce are more difficult to learn.
- **Spelling** Sounds-spelling mismatches are likely to be the cause of errors, either of pronunciation or of spelling, and can contribute to a word’s difficulty. While most

English spelling is fairly law-abiding, there are also some glaring irregularities. Words that contain silent letters are particularly problematic: foreign, listen, headache, climbing, bored, and honest, cupboard, muscle, etc.

- **Length and complexity** it suggests that the length of a word does not necessarily correlate with its level of difficulty in learning. However, it is generally observed that frequently used words in English tend to be shorter in length. This is advantageous for language learners as they are more likely to encounter these words more frequently, thus increasing their chances of mastering them. This factor of frequency positively impacts the "learnability" of these words.
- **Grammar** One issue that poses a challenge is the grammar linked to a particular word, particularly when it deviates from its equivalent in the learner's first language. It can be difficult to recall whether a verb such as "enjoy," "love," or "hope" should be followed by an infinitive (e.g., "to swim") or a gerund (e.g., "swimming"), which can further make a difficulty.
- **Meaning** When two words share a similar meaning, it is common for learners to become confused. An example of this is the usage of "make" and "do". While "make" is used when referring to creating something, such as making breakfast or making an appointment, "do" is used when referring to completing a task, such as doing the housework or doing a questionnaire. It is important to understand the distinction between these two words in order to effectively communicate in both written and spoken English.
- **Range, connotation and idiomaticity** When it comes to choosing the right words for effective communication, it's important to consider their range of contexts and potential

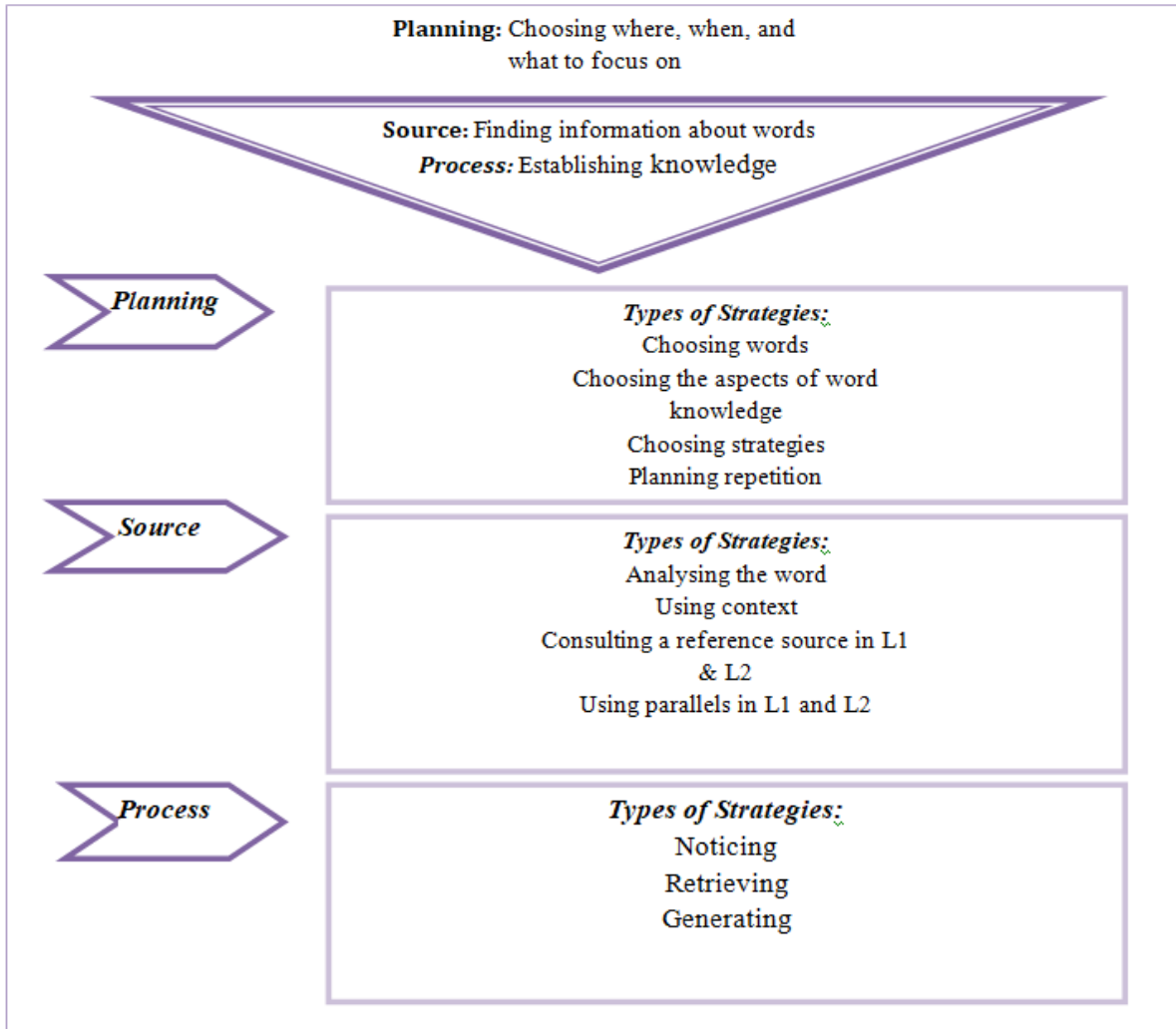
connotations. Words that can be used in a wide variety of situations are generally perceived as easier to understand than their more specific synonyms. For example, the verb "put" is a versatile choice compared to "impose," "place," or "position." Similarly, "thin" is a safer bet than "skinny," "slim," or "slender." However, it's also important to be aware of potential connotations that certain words may carry. For instance, the word "propaganda" has negative connotations in English, but its equivalent in another language may simply mean "publicity." On the other hand, "eccentric" does not have negative connotations in English, but its nearest equivalent in other languages may be "deviant." Additionally, idiomatic expressions can pose a challenge for non-native speakers. Phrases like "make up your mind" or "keep an eye on" may not have a transparent meaning, making them more difficult to understand than words with clear definitions like "decide" or "watch."

2.2.6 Taxonomies of vocabulary learning strategies:

Nation (2001) has introduced a taxonomy that is grounded in theory. This taxonomy is not only practical and easily understandable for learners, but it also simplifies the complexity of vocabulary knowledge (what is involved in knowing a word) by separating it into three distinct categories: planning, sources of and processes. By doing so, it raises learners' awareness and empowers them to make decisions about the strategies they need to employ to enhance their vocabulary learning. The figure below displays the process:

Figure4

Vocabulary learning strategies taxonomy



Note. This figure is suggested by Nation (2001, p. 23)

2.2.7 Strategies for Teaching Vocabulary

Vocabulary learning strategies (VLS) is an approach to vocabulary learning. It shifted from the teaching-oriented approach towards a more learner-centred one which is interested in the observing how learners' actions influence the process of vocabulary acquisition (Shmitt, 2002).

Some of the most common strategies used are the following:

- **Making meaning or guessing meaning from context:** it refers to guessing the word meaning from the context. Learners are asked to use the available clues and draw on them to reach the unknown meaning (Richard and Renandya, 2003). In contrast, Shmitt and McCarthy (2005) have stated that a generated number of problems are attributed with this. The process of guessing can be time consuming because learners can be slow in guessing meaning. Also, it is an error-prone process.
- **Learners' first language and dictionary use:** it is the most common strategy. Nation (2001) points out that when the meaning is in the learner's first language, it is facilitated. In this connection, Folse (2005) favours the use of dictionaries. According to him, dictionaries provide appealing and relevant information to learners. Furthermore, dictionaries contain meaning of the words, spelling and pronunciation.
- **Vocabulary notebooks:** it is considered a memory aid to facilitate visualising the relationship between new and old words. It can be used to record the words, pronunciation and even collocations. Meaning and translation can also be recorded either on the same page or on a separate one. This process will help them to easily retrieve words by looking at their notebooks and recalling information (Ledburry, 2007).
- **Games:** it is a useful tool in improve children's vocabulary acquisition in as natural a way as would be normally achieved through play (Angelova & Lekova, 1995; Atake, 2003; Deng, 2006).

In an EFL classroom, activities play a crucial role in consolidating the understanding of the lesson. It is undeniable that effective teaching of English vocabulary must be followed by well-structured vocabulary activities. Berrabah (2015) suggests certain

criteria for activities in an EFL classroom, such as the need for clear and visible objectives, avoiding excessive cognitive demands, and most importantly, providing sufficient exposure to the target language.

Word games, in particular, have been found to be highly efficient in developing vocabulary knowledge and strengthening existing skills, especially with young learners.

Thornbury (2002) has noted that “useful games are those that encourage learners to recall words, preferably at speed”. Children have always enjoyed playing, and incorporating learning into play can yield positive results.

Section Two: Educational Language Digital Games

3. Definition of games

A game can be defined as an activity which is done by a number of people and guided by a set of rules. It usually used for entertainment or fun. Games can be competitive, cooperative, or both, and can involve physical activity, mental or logical skills, strategy, chance, or a combination of these elements. According to Gibbs (1981), a game is an activity carried out by cooperating or competing decision-makers who want to achieve their objectives following a set of rules. According to Rixon (1981), a game is a closed activity that has a beginning and an end with a winner who defines the end of it.

In connection, Byrne (1995) suggests that games are a form of play governed by rules. Despite being enjoyable and fun or a break from routine activities, they are a way of getting the learner to use the language in the course of the game.

3.1 Definition of digital games:

Unlike the traditional games, digital games encompass the use of computer, tablets and technology in general. Therefore, Juul (2003) has defined digital games as "... a rule-based formal system with a variable and quantifiable outcome, where different outcomes are assigned different values, the player exerts effort in order to influence the outcome, the player feels attached to the outcome, and the consequences of the activity are optional and negotiable". Additionally, Nussbaum & Beserra (2014) have stated that the process of implementing digital games in learning is known as digital-games based learning (DGBL).

As mentioned above, digital game-based learning involves utilizing technological tools such as computers, tablets, and phones to captivate learners and facilitate the acquisition of new knowledge, skills, and desired outcomes. This innovative approach to education has proven to be highly effective in engaging students and promoting active participation in the learning process (Corti, 2008).

3.2 Types of educational language games

3.2.1 Traditional educational language games:

There are plenty types of games, and it is difficult to classify them into categories. Hadfield (2003) distinguishes two types of games. They are Linguistic games and communicative games. The later focuses on accuracy whereas the later focuses on exchanging information. Further, a more detailed classification composed of both linguistic and communicative games is suggested by Hadfield (2003) as follows:

Sorting, ordering or arranging games: it is a type of game in which pupils are given cards and they are asked to order them. For example, teacher asks the learners to order the days of the week using the provided cards.

Information gap games: an exchange of information occurs in the process where the learner with the information exchanges it with the ones without it.

Guessing games: learners mime the information from a flashcard and the other learners try to guess the word.

Role playing games: students have a chance to play a variety of roles that they might not play in real life. They also practice dialogues.

Cross words: the most common one, it takes the form of a square grid of white and shaded squares. The white cells are supposed to be filled with letters whereas the shaded ones are used to separate the letters or words.

Puzzles: it is a game or problem that tests a person's ingenuity or knowledge. Puzzles are often designed to be solved by logic, and sometimes require other problem-solving skills. Puzzles can come in many different forms, including crosswords, jigsaw puzzles, word searches, mazes, and logic puzzles.

Memory games: seeing how much information can the player remember.

Labeling games: following the same principle of matching, players here match labels and pictures.

Board games: is a tabletop games include pieces moved or placed on a pre-marked surface or "board" in line with a collection of rules.

3.2.2 Digital-games

In the realm of Digital Game-Based Learning (DGBL), Stewart et al (2013) have distinguished two distinct categories of games can be identified:

Specialized games: Those have been designed with an educational objective in mind, It is important to note that while specialized games are specifically tailored to meet educational goals. Furthermore, there are three distinct categories of special-purpose games that can be identified. These games are to achieve knowledge transfer (cognitive learning outcomes), skill acquisition (skill-based learning outcomes) or attitudinal/behavioral change (affective learning outcomes)

Commercial-Off-The-Shelf (COTS) games: these games are originally created for entertainment purposes but are now being utilized in an educational setting. COTS games can also be effective tools for learning. However, their primary purpose is still entertainment, and they may require some adaptation to fit within an educational framework.

3.3 The use of educational language games

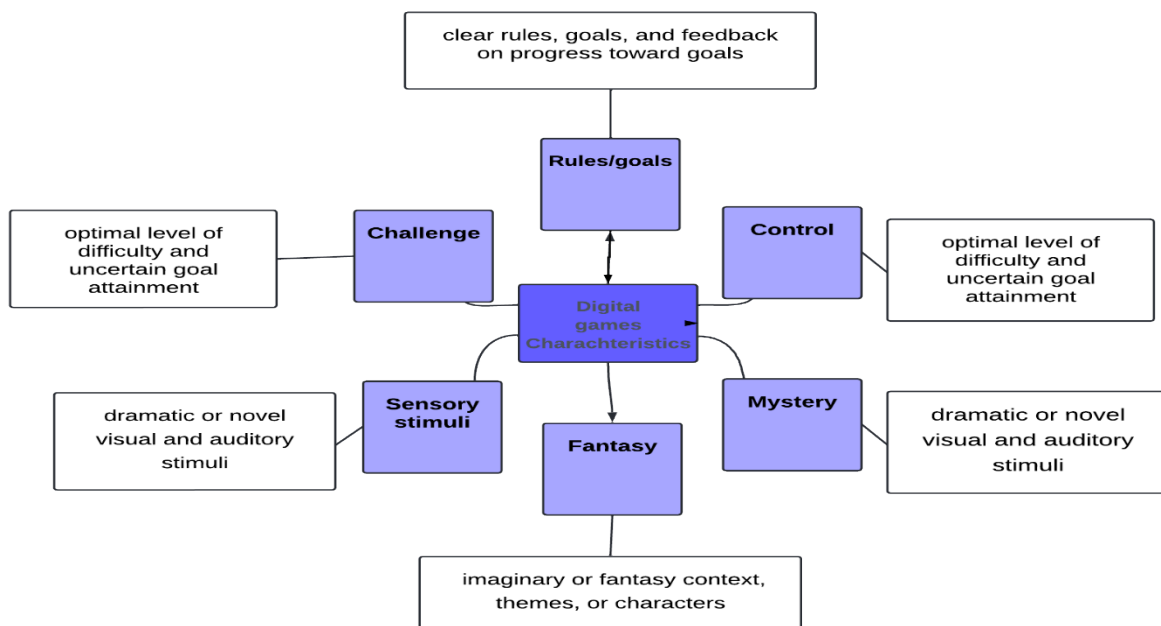
The use of language games is not restricted to a certain level. It can be used in different language classroom with different levels. The complexity of the game depends on the level of the learners. That is, the game used with beginners is not as simple as an advanced class's game. However, games are more suitable for beginners and young learners. Nalasco and Arthur (1991, p.76) argue that "in addition to the personal challenge, younger students also enjoy competing with their peers, and introducing a game element is a way of livening up any material". Maintaining young learners' attention can be difficult as they are encountering a new and challenging vocabulary for the first time. They tend to forget the new words. Therefore, playing a short and entertaining game help them learn more comfortably. Games are not only used for their fun nature, but also because they create a challenging atmosphere where learners overcome their language barriers and use the English language more freely in the process. Furthermore, Halliwell (1991) argues that young learners encompass a creative language skill and bring it into the classroom. A communicative atmosphere where they could express themselves should be provided by the teacher. Also, due to the use of unpredictable language during an activity, teachers should encourage learners to actively construct language for themselves. Games are important and useful for this reason.

3.4 Characteristics of digital game-based learning

According to Gee et al (2002), it has been determined that game characteristics can be classified into six distinct categories. These categories are as follows:

Figure6

Characteristics of digital games



3.5 The role of the teacher

Manesis (2018) has noted that the integration of digital educational games into primary school classrooms requires the teacher's careful consideration of content, structure, and design parameters. The teacher's role is crucial in ensuring the quality of learning and promoting active participation among students. In addition to being essential, the teacher's role also demands creativity, as they are expected to incorporate game-based learning into their teaching techniques. Further, Gee (2003) states that the utilization of digital educational games entails a

shared responsibility between the teacher, computer, and learners, each fulfil a distinct function. This collaborative approach allows for a more dynamic and engaging learning experience for students. The table illustrates their function:

Table 2.5

The role of the teacher

Computer as teacher	Learners as teachers
It creates a learning environment based on the game's rules of conduct	Learners correct their own mistakes
It changes and adapts according to the level of the user	They advise their classmates on how to achieve goals
It is available at any time and for as much time as needed by the learner	They cooperate with their classmates to find solutions to problems
It may contain appropriate instructions or it can assist in the process of problem-solving	They gain knowledge and dominance over the subject they learn about
It gives immediate feedback through the results of the learner's actions	
It incorporates learners into a competitive environment while motivating them to become involved	

3.6 Teaching vocabulary using games within ESA method

3.6.1 Definition of ESA method:

Natural language acquisition can prove to be a challenging feat to replicate within the confines of a classroom. However, there are certain elements that educators should strive to emulate in order to facilitate effective language learning. These elements are encapsulated in the ESA model of teaching, which is developed and introduced by Harmer (1998). By incorporating

ESA into language classrooms, instructors can create an environment that fosters optimal learning outcomes for their students.

Harmer (2001, p.67) states that “Engage, Study, and Active method is a method to be presented in a language classroom to help the students” to learn effectively and not make them bored”. ESA method is an alternative way to solve problems in vocabulary mastery. The method can be very effective in increasing students’ interest to study. In addition, ESA method may raise learners’ interest, and curiosity in learning by attracting attention and motivating them to engage. It increases the interest of students and also their understanding.

3.6.2 Elements of ESA method:

According to Harmer (2001), ESA method consists of three main elements namely, engage, study and activate.

- **Engage phase:** the teacher targets the students’ interest and engages their emotion. Thus involving their emotions, Activities and materials which frequently engage students include games (developing on age and type, music, discussion when handled challengingly), stimulating picture, dramatic stories, amusing anecdotes, etc.
- **Study phase:** the focus is directed to the target feature. For instance, the teacher can explain grammar; the students can study language evidence to discover grammar for themselves. They can work in groups studying a reading text or vocabulary. But whatever the style, study means any stage at which the construction of language is the main focus. Some typical areas for study might be the study and practice of the vowel sound in “ship” and “sheep”, (e.g. “chip”, “cheap”, “dip”, “deep”, “bit”, “beat”, etc.)

- **Activate phase:** the students will be able to apply and create something from the previous stage. That is, the focus is not on language construction or a particular language pattern, but it is the use of the full language knowledge in solving a task. Further, Tomlinson (2013, p.238) defines engaging as trying to encourage the student to speak.

3.6.3 Advantages of using ESA method

According to Robertson (2000), ESA method is very important. It provides students with a chance to rehearse English within the safe environment of the classroom. The students will practice their English in the classroom that will be used later in real world. Simply put, the advantage of the method is that students involve their curiosity, and emotions toward the topic to be taught. Learners will have fun and enjoy the learning process. Teacher should pay attention and motivates to students as target learner. Moreover, this method permits to demonstrate their opinion, knowledge and language.

3.7 The educational values of digital games

Although games are often seen as a source of entertainment, Coyne (2003) emphasizes that playing games can also contribute to the development of values and knowledge about the world. In studies on values, Griffiths (1998) has focused on whether digital games can promote aggression and violence among players. It is important to recognize that games have the potential to shape individuals' perspectives and attitudes, and further research is needed to fully understand the impact of gaming on values and behaviour.

In line with this, Juul (2002) confirms that it is widely agreed upon that the values of discovery and achievements are integral to the nature of games. Furthermore, Squire (2002) has highlighted the educational potential of games from both cognitive and social perspectives.

Games have the ability to support, reinforce, and accelerate the learning process, as well as promote higher-order cognitive development (Green & Bavelier, 2003; Klabbers, 2003; de Freitas, 2005; de Freitas & Oliver, 2006).

3.8 Digital games as a vocabulary teaching tool

Lewis (1999) argues that games are popular among children because they like to play. Through games, young learners could interact, discover, and experiment with their surroundings. Using games not only enhances students' motivation, but also provide an incentive and stimulus to use the language. Harmer (2008) has stated that in order to have the ability to speak English fluently, young learners need to have the ability to know the language features and to process information immediately. Therefore, young learners must practice through variety and appropriate techniques that aid their information process and simultaneous operations of the language. According to Allen (1983), games are important in teaching vocabulary because they highlight the necessary and important words to achieve the objectives of the game. Uberman (1998) has agreed that games create a fun and relaxed atmosphere where young learners could learn fast and retain words better. Vernon (2009) argues that games are an effective tool to teach vocabulary to young learners. Children participate and pay more attention because they enjoy themselves and the classroom and feel and do better during and after the game. Repetition will be less boring and fun for children to which consolidates their learning of new words. Furthermore, by involving physical-movements in games, young learners will be alert and stimulated. Young learners often get impatient and bored very quickly if they attend lessons for a long period, so involving physical movements every now and the will guarantee their participation. Vernon (2009) has stated that games that involve learners to take part in a healthy

competition could help them in learning more without forcing their participation. Thus, choosing the right game can support healthy competition in the classroom.

3.9 Advantages of using educational digital games in teaching EFL

According to Nalasco and Arthur (1991, p.76), “in addition to the personal challenge, younger students also enjoy competing with their peers, and introducing a game element is a way of livening up any material”. In the line, Uberman (1998,p.20) states that “games encourage, entertain, teach, and promote fluency. If not for any of 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”. Additionally, McCallum (1980) emphasizes this point by suggesting that “games automatically stimulate student interest, a properly introduced game can be one of the highest motivating techniques.” Games are advantageous at this point because they reduce anxiety, increase positive feelings and improve self-confidence because learners do not afraid of punishment or criticism while practicing the target language freely (Crookal, 1990, p.112).

3.10 Practical implications of educational language digital games to teach vocabulary

3.10.1 The implementations of educational language digital games to teach vocabulary

Teachers must keep in mind the following two steps while implementing games to teach vocabulary. The first step is grouping the students. The second step is giving explanation and instruction about the game.

3.10.1.1 Grouping the students

Scott & Ytreberg (2004) have stressed on the importance of letting learners sit in a group because they enjoy being with their peers. Sitting them together encourages cooperation. However, they do not necessary need to be grouped all the time. Phillips (1993) highlightes that

groups of more than five students will result in counter-productivity where chaos might emerge. One way to group learners is to ask them to count one until two in a sequence manner and students with the same number will be in the same group. Also, learners could be asked to choose a name for their group to record their scores. If there is an uneven number of student, a more even division should be provided by the teacher; For instance, five students could be grouped into two groups and one group could have three students whereas the other two. Such techniques of grouping will help in creating a cooperative and competitive atmosphere.

3.10.1.2 Giving explanation and instruction about the game

In order to achieve the desired outcome and fulfil the goal of the game, explaining the game to learners is important. An integral role in the classroom is assigned to the teacher when implementing games. Giving clear explanations and instructions about the activity so that pupils understand what to do and practice the intended vocabularies list. If learners did not grasp rules and instructions of the game, the process will be a waste of class time and there will be no outcomes.

3.11 Challenges of using digital games in teaching vocabulary

Despite the value of applying games in the language class, some challenges arise while using them. For class management during an activity, Brown (2001) has stated that the teacher must understand the students' characteristics in order to create a good environment for learning. Moreover, Manesis (2018) states that there are mainly two types of barriers that might hinder the success of the process of implementing digital games. The table below sums up the two types:

Table 2.11*Types of barriers*

Types of barriers	Definition	Examples
External barriers	Barriers that surround the teacher	<ul style="list-style-type: none"> ➤ Lack of time. ➤ Lack of education. ➤ Limited funding. ➤ Limited single teaching hour.
Internal barriers	It refers to the barriers that are related to teacher.	<ul style="list-style-type: none"> ➤ Teacher's personal beliefs. ➤ Lack of interest ➤ Lack of confidence

3.12 Previous Studies

A study by Muhanna (2012) entitled “Using online games for teaching English vocabulary for Jordanian students learning English as a foreign language”. It aims at investigating “the effectiveness of using online games as a tool for teaching vocabulary in an EFL context”. The study has involved 160 tenth-grade Jordanian students who are administered pre and post-tests to assess their vocabulary knowledge. The participants are divided into four groups, two of which are female and two are male, and are purposefully selected. All groups are taught vocabulary, with the experimental groups being taught using online games, while the control groups are exposed to conventional methods such as memorization. The results of the study have revealed that there are statistically significant differences in the post-test scores between the control and experimental groups, with the experimental group outperforming the control group. However, there was no statistically significant difference in the achievement of male and female students. These findings suggest that incorporating online games into vocabulary

instruction can be an effective approach in an EFL context. This study provides valuable insights for educators and policymakers seeking to enhance language learning outcomes.

Smith et al (2012) have conducted a research entitled “Games people (don’t) play: An analysis of pre-service EFL teachers’ behaviors and beliefs regarding digital game-based language learning.”. It is a comprehensive study to gain insight into the beliefs and behaviors of pre-service English as a Foreign Language (EFL) teacher in Germany regarding digital game-based language learning (DGBLL). The study has involved 220 students who are enrolled in the Teaching English as a Foreign Language Major at Leuphana University. Validated instruments are administered to obtain the participants' behaviors and beliefs regarding both language learning and DGBLL. The findings of the study have revealed that the participants have positive beliefs about DGBLL, but are limitedly engaged in this method. Interestingly, good perceptions are found to be inversely related to prior experience. Furthermore, engagement in game playing is found to have a positive impact on perceived English language skills and language learning strategies. These results have significant implications for DGBLL and can help teachers understand the attitudes of "digital natives." It is essential for educators to recognize the potential of DGBLL and to encourage its use in language learning. By doing so, they can create a more engaging and effective learning environment for their students.

In conclusion, this study sheds light on the attitudes and behaviors of pre-service EFL teachers in Germany regarding DGBLL. The findings highlight the importance of incorporating digital game-based learning into language teaching and learning practices.

“Teachers’ perceptions of the use of technology in teaching languages in United Arab Emirates’ schools” is a study conducted by Sadiq A.A. I, et al (2010). The aim of this study is to explore the attitudes of Arabic and English teachers towards the integration of technology in

their classrooms in United Arab Emirates (UAE) schools. The success of incorporating instructional technology in language teaching and learning is heavily reliant on the support and mindset of the teachers involved. To gather data, questionnaire and focus group-interview techniques are utilized. The questionnaire data is analyzed using descriptive statistics and t-tests, while the focus group data is thematically analyzed. The findings from both the quantitative and qualitative data have revealed the teachers' perceptions regarding the integration of technology in their classrooms, the obstacles to technology use, the incentives for teachers who use technology, the types of technology used, and the teachers' and students' use of technology. This paper concludes with recommendations to facilitate the use of technology in language teaching in the UAE.

Moreover, DeHaan, Reed, and Kuwada have conducted a study in 2010 to examine the impact of interactivity with a music video game on second language vocabulary recall. The title of the study is "The effect of interactivity with a music video game on second language vocabulary recall". It involves dividing participants into two groups, with one group playing an English-language music video game for 20 minutes, while the other group watches the game simultaneously on another monitor. Following the game, a vocabulary recall test, an experience questionnaire, and a two-week delayed vocabulary recall test are administered. The results of the study have indicated that both the players and the watchers of the video game are able to recall vocabulary from the game. However, the players have recalled less vocabulary than the watchers. DeHaan et al. (2010) argue that while a video game containing target language vocabulary can be enjoyable, its interactivity can hinder the language acquisition process. This is because players may be unable to recall the game's vocabulary as well as watchers due to the multiple foci of attention required during gameplay.

It is important to note that the study's findings do not suggest that vocabulary can be acquired more effectively through a non-interactive approach than an interactive one. Instead, the study highlights the potential limitations of interactivity in language learning contexts.

Overall, DeHaan, Reed, and Kuwada's study provides valuable insights into the role of interactivity in second language vocabulary acquisition. Further research in this area could help to inform the development of more effective language learning tools and strategies.

“The Effect of Games on Improvement of Iranian EFL Vocabulary Knowledge in Kindergartens” is an inquiry done in 2013 by Aslanabadi and Rasouli. It investigates the impact of games on the enhancement of Iranian EFL vocabulary knowledge in kindergartens. The primary objective of their research was to identify an effective method to assist young EFL learners in retaining newly acquired vocabulary. The study was conducted at two kindergartens, where students were divided into experimental and control groups. The experimental group was provided with an online language teaching game, while the control group received traditional teaching methods. The findings of the study revealed that games not only add an element of enjoyment to the classroom, but they also serve as a motivational tool for learners, ultimately improving their confidence. This research highlights the potential benefits of incorporating game-based learning into language education for young learners. By utilizing interactive and engaging activities, educators can create a more stimulating and effective learning environment, ultimately leading to improved language acquisition and retention.

Furthermore, Dolati and Mikaili (2011) have investigated “the impact of instructional games on students' vocabulary learning”. They have aimed at gaining insights into the role of games in enhancing the level of vocabulary acquisition among students. The study involved 70 female students aged between 12 and 13 years, who were selected from a primary school in

Iran. A pretest and posttest methodology is employed by the researchers. Upon analyzing the results of the pretest and posttest, they have discovered that the use of games played a crucial role in teaching vocabulary to language learners. Additionally, they have found that the application of games was an effective strategy for enhancing students' vocabulary learning. Additionally, they argue that "Game has its potential as an educational tool for literary training; and can motivate and engage learners especially the quiet and passive ones in the whole learning process"(p.1218).

3.13 Conclusion

Earlier, the term "vocabulary" has referred to a single word and its meaning. However, this conceptual chapter seeks to challenge this traditional notion and emphasize the importance of vocabulary in foreign language acquisition. It delves into the complex process of acquiring, measuring, and testing vocabulary, as well as the significant role it plays in teaching and learning a foreign language.

It is crucial to recognize that vocabulary is not just a collection of words, but rather a fundamental aspect of language learning. The acquisition of vocabulary is a multifaceted process that involves not only memorization but also understanding the context in which words are used. In the realm of education, digital games have become a vital tool for both teaching and learning. The entertainment aspect of it has proven to be particularly effective in engaging students and enhancing their educational experience. It is now widely recognized that incorporating gaming into education is a valuable and productive approach, rather than a mere waste of time.

Chapter Two:

Results and Discussion

Chapter Two: Research Design and Procedures

4. Introduction

Chapter two covers the practical process in which the research hypothesis and its objectives are tested. It consists mainly of the research methodology and tools used to collect data on the subject of the implementation of educational language digital games to enhance the vocabulary acquisition. Further, the chapter also comprises of the population of the study and research tools namely a quasi experiment and a questionnaire devoted to the teachers. Part two of the chapter is about the data analysis, findings and recommendations.

4.1 Research design

Concerning the aims of the study, a mixed method is exploited to carry out the study. Quantitatively, learners are exposed to a quasi experiment which consists of a pre-test, treatment and a post-test. In the other hand, a questionnaire is designed as a qualitative method to get more information and validate the hypotheses of the inquiry.

4.2 Population and sampling of the study

The population of the current research is third-year learners at Alia Ben Ali EL Ammari Middle School in Sidi Ghezal, Biskra. A random sampling was opted for selecting the participants. Dornyei (2007, p,97) suggests “... random samples are almost always more representative than non-random samples”. 36 pupils of third year middle school learners are randomly selected among 2 groups. The English teacher of the school and the appointed inspector of District 2 in Biskra are part of this study.

4.2.1.1 Teacher's profile

The informant is a middle school English teacher, ENS Ouargla graduate, with two years of experience in teaching English at middle school. Two different levels are accustomed to the teacher namely, MS1 (Middle School year one) and MS3 (Middle School year three). MS3 is the level in which the quasi experiment is designed.

4.2.1.2 Learners' profile

Thirty-six Algerian middle school students are randomly selected by the researcher, both male and female, whose ages range from 12 to 17 years old. These participants are third-year students at Alia Ali Ben El-Ammari middle school in Sidi Ghezal, Biskra, and have been studying English as a foreign language for nearly three years. The primary reason for selecting this particular sample population is due to their prior exposure to the English language for a sufficient period of time. As a result, the researcher assumes that they are able to be tested because they possess the necessary vocabulary background.

4.3 Research tools

The research instruments opted to collect data for the research are namely quasi experiment and a questionnaire for validating and measuring the credibility of the study.

4.3.1.1 Quasi experiment

The experimental method is the most preferred type of method of research that can truly test hypothesis regarding the cause and effect relationship. Concerning the quasi experiment process, learners are exposed to a pre-test. Regarding pre-test, Mackey and M. Gass (2005, p.149) claim that "In many second language studies, participants are given a pre-test to ensure comparability of the participant groups prior to their treatment". Second, a treatment session has

taken place in which participants receive a treatment through different games. Third, a post-test is given based on the measurement of the effects obtained from the treatments.

4.3.1.2 Description of the quasi-experiment

1. Pre-test

For the sake of measuring learners' level in vocabulary, a pre- test was designed. The pre-test took place at Alia Ali Ben El-Ammari middle school. A total number of 36 pupils were tested. The duration of the test was one hour and a half where pupils have done four different activities. The activities were structured from easy to difficult. The first exercise was about listening and filling in the gaps. The objective of the second exercise was to match each word with its definition. In the last one, they were given a table with a list of words and their opposites and they have to colour them.

The aim of the pre-test is to gather details on learners' level in vocabulary before implementing games.

2. Treatment (training)

In regards to the aim of the current study and in order to assess the effect of educational language digital game on third year middle school pupils, two online games were chosen. The selection of digital games required to meets the level of learners and objective of the study. That is, the content of the game had to match the syllabus of the population. The treatment session was during tutorial sessions over a period of four weeks. To specify, the group of 36 pupils was divided into two groups of 18. Each group of 18 had a one tutorial session per-week. Practically, the first game was a cross word game about irregular verbs. It covered some verbs in one hour. Second, the game was an online "kahoot" quiz designed personally by the teacher. The teacher

designed the games herself to ensure credibility. The two games aimed at presenting different structures and the use of new vocabulary.

➤ **Game one (Cross words)**

Unlike the traditional cross word games, this game is available online on different websites. However, it is better to use an educational website to play it. An online website called “Mr.nussabaum” contains a variety of educational games. The game selected from this website was called “Spelling central”. It is mainly a cross word game where the words can be inputted and modified accordingly.

➤ **Game two (Kahoot)**

The teacher has to design the game and choose the questions to be included in the quiz. The platform provides a variety of questions (multiple choice questions, yes/ no questions, puzzles and short answers). The number of questions and duration of answering can also be modified by the designer. The platform can be easily accessed because it is free. However, there is a paid version to access further and advanced options. To play the game, learners had to follow these procedures:

Step one: Learners need to login to the “kahoot” website by browsing “kahoot.it” and enter the pin code provided by the teacher.

Step two: in the second step, the learners had to choose their group nickname.

Step three: It introduces the aim of the game. The welcome stage is mainly a song or a countdown to prepare learners while they are waiting for their peers.

Step four: The game starts when all the players are ready. The first question will be displayed and a timer will be set.

Step five: When all the players answer the question, the right answer and score will be displayed on the screen.

Step six: By the end of the game, the players will be graded and winners will get a round of applause.

3. Post-test

The post-test was mainly a recapitulation of the pre-test. The learners have done the same activities they were exposed to in the pre-test. It aims at measuring their progress after the treatment sessions where the educational language digital games were implemented.

4.3.1.3 Questionnaire

A questionnaire is considered an effective way to access learner's opinion (Brace, 2004). Besides making questions engaging and varied, it aims at gathering the appropriate data from a specific population (Nation, 1997). In the current inquiry and as a fundamental part of data collection instruments, the teachers' questionnaire was designed to evaluate the teachers' attitude towards implementing educational language digital games as a pedagogical tool in the EFL classroom. The questionnaire consists of 13 close-ended questions, divided into 03 parts. Each question aims at collecting specific information to support the hypotheses.

4.4 The analysis of pre-test result

After conducting a pre-test with MS3 class, the analyses have been quantitatively analyzed in Excel. The results of the pre-test are displayed in the table below:

Table 3.4
Pre-test scores and percentage

Students	Pre-test scores	Percentage of correct answers
S1	11	55%
S2	05	25%
S3	10	50%
S4	20	100%
S5	18	90%
S6	12	60%
S7	08	40%
S8	11	55%
S9	10	50%
S10	20	100%
S11	19	95%
S12	05	25%
S13	06	30%
S14	03	15%
S15	07	35%
S16	04	20%
S17	11	55%
S18	14	70%
S19	15	75%
S20	13	65%
S21	10	50%
S22	13	65%
S23	11	55%
S24	09	45%
S25	03	15%
S26	10	50%
S27	07	35%
S28	06	30%
S29	12	60%
S30	10	50%
S31	11	55%
S32	05	25%
S33	19	95%
S34	16	80%
S35	04	20%
S36	00	0%
Mean	10.14	50,70%

From the results in the table above, learners' marks can be categorized into three categories. The first category contains 14 learners. The scores of those learners are from (0 to 9 out of 20). That is, their percentage is from (0%) to (45%). The second category contains learners who have scored from 10 to 14 with a total number of 15 learners. This category's percentage range is (55%) to (70%). The third and last category is learners who scored 15 and above by mean of 90% of correct answers. Furthermore, The results show that the mean of the pre-test is 10,14 and it represents a percentage of (50,70%) of correct answers.

4.4.1 Interpretation of pre-test results:

The pre-test results demonstrate that the learners' level and background is different in terms of vocabulary. Also, as it is mentioned previously in the comment, the three categories represent that the lowest average is (0%) and the highest average scored is (100%). Thus, there is diversity in the learners' vocabulary knowledge and background. The mean of correct answers, in the other hand, is 50, 70% which is considered below average. As a result, learners are weak in terms of learning vocabulary as shown in the pre-test.

4.4.2 The analysis of post-test results

The post-test is conducted after a treatment session containing two vocabulary digital games. The post- test is a recapitulation of the pre-test to check learners' progress in learning vocabulary. The table below displays the results of post-test:

Table 3.5
Post test scores and percentage

Students	Post-test	Percentage of correct answers
S1	13	65%
S2	9	45%
S3	12	60%
S4	20	100%
S5	20	100%
S6	15	75%
S7	12	60%
S8	11	55%
S9	13	65%
S10	20	100%
S11	19.5	97.5%
S12	10	50%
S13	10	50%
S14	12	60%
S15	11	55%
S16	9	45%
S17	16	80%
S18	18	90%
S19	18	90%
S20	16	80%
S21	13	65%
S22	17	85%
S23	11	55%
S24	10	50%
S25	7	35%
S26	11	55%
S27	9	45%
S28	12	60%
S29	13	65%
S30	14	70%
S31	15	75%
S32	7	35%
S33	19	95%
S34	18	90%
S35	9	45%
S36	5	25%
Mean	13.19	65.90%

The table above displays the post-test results. It presents a notable change in the learners' averages as they record a percentage of (65,90%) by mean of (13,19%). The lowest scores shifts from (00) to (05) out of 20 in which the percentage of the correct answers raised from (00%) to (25%). Also, the number of students who scored below the average has changed from 14 to 7 learners. In the other hand, the highest score maintained an average of (100%) with more learners getting the full mark. All in all, there is a remarkable improvement in the post-test.

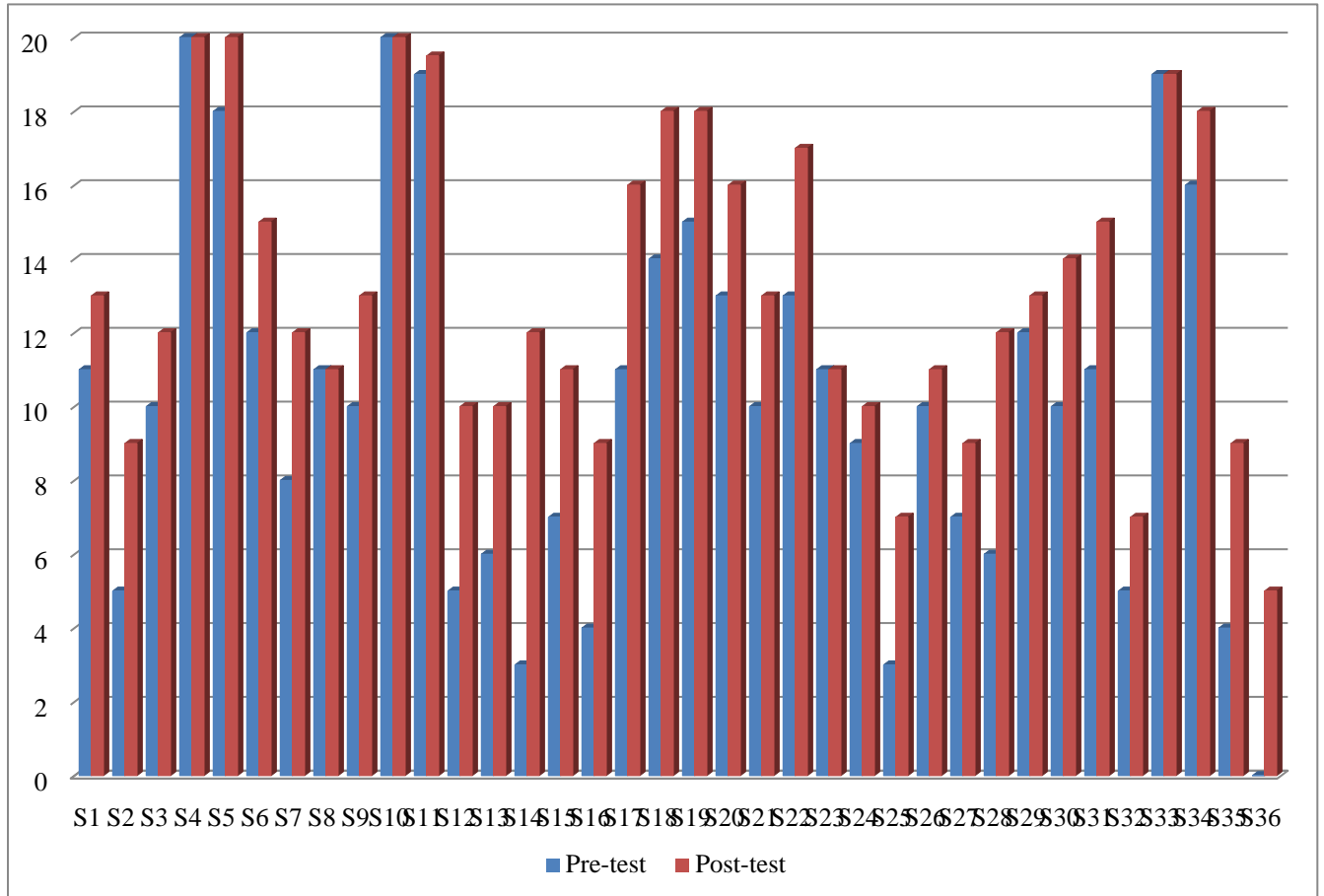
4.4.3 Interpretation of post-test results

i. Comparison between pre-test and post-test results

The following graph displays the comparison of the results of both the pre and post-test:

Figure6

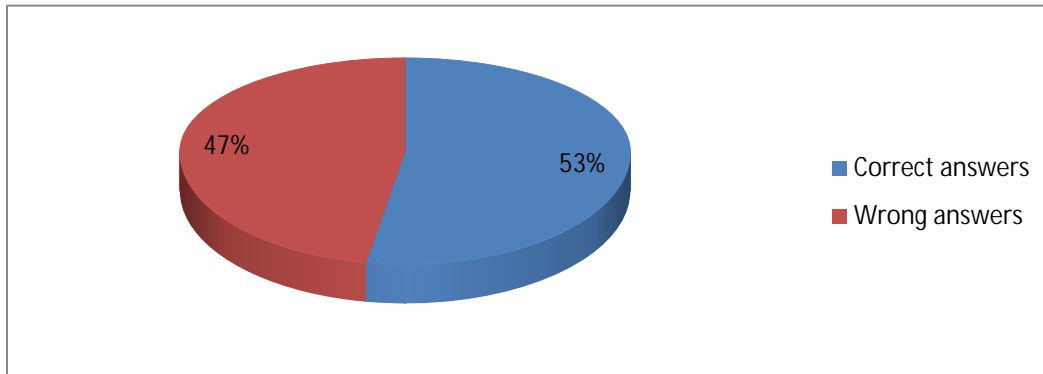
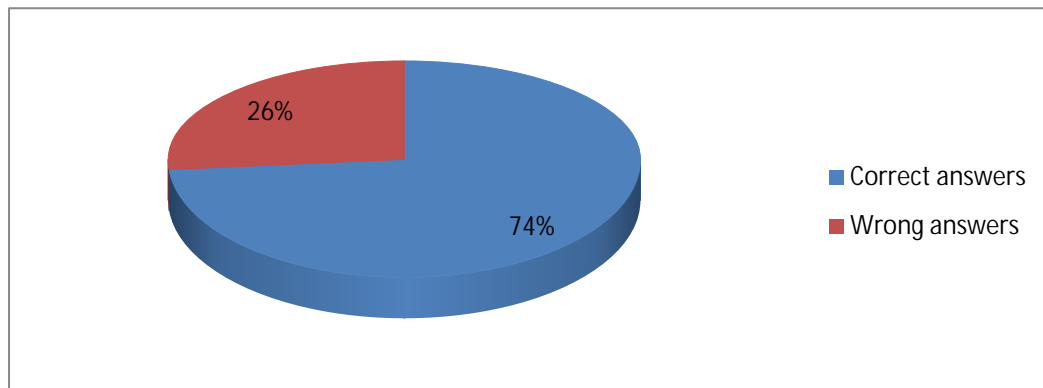
Pre-test and Post-test results



As shown in the graph above, there is a difference in the learners’ scores in the post-test compared to the pre-test. The results in the shape show that learners have improved relatively. Thus, we can assume that the implementation of digital games in the treatment session was beneficial to acquire vocabulary. Furthermore, the table below show a comparison between the mean and total of the pre-test and post-test.

Table 3.6
Comparison between pre-test and post-test results

	Total score	Mean
Pre-test	368	10,13
Post-test	474,5	13,18

ii. Pre-test results**Figure7***Pre-test percentage of correct and wrong answers***iii. Post-test results****Figure8***Post-test percentages of correct and wrong answers*

The two shapes above demonstrate the rate or percentage of the learners' correct and wrong answers in the pre and post-test. As it can be noticed in the pre-test and post-test, the percentage of correct answers are higher than the wrong answers. That is, the percentage of the correct answers in the pre-test is 53% whereas the percentage of the wrong answers is 47%. However, in the post-test, the percentage of the correct answers has advanced from 53% to 74% in a percentage of 21% while the percentage of wrong answer decreases from 47% to 26%.

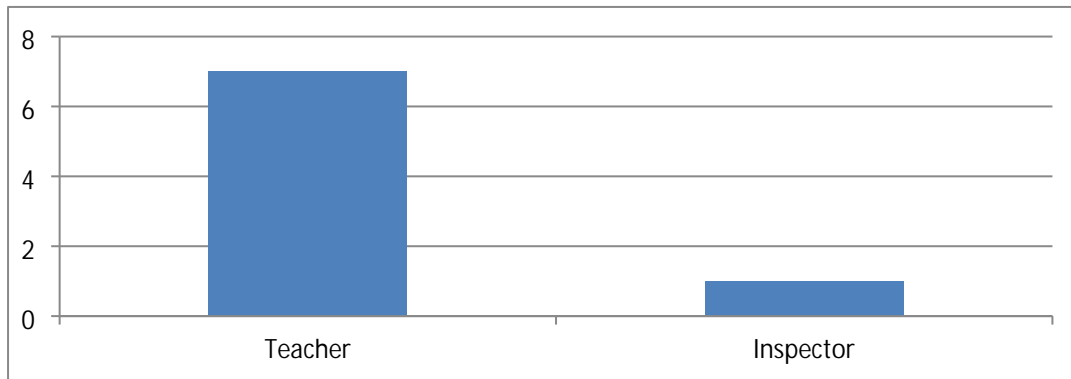
4.5 Analysis of the questionnaire:

➤ Section one: General information

Q1: the position of the participants

Figure9

Position of participants



As it is noticed in the chart above, most of the participants were teachers due to the fact that the district has only one inspector. Moreover, teachers are more experienced in this field because they are in direct contact with learners. Despite the small number of inspectors in the district, their participation is of a valuable importance due to their knowledge and contribution.

Q2: years of experience

Table 3.4

Years of experience of the teachers

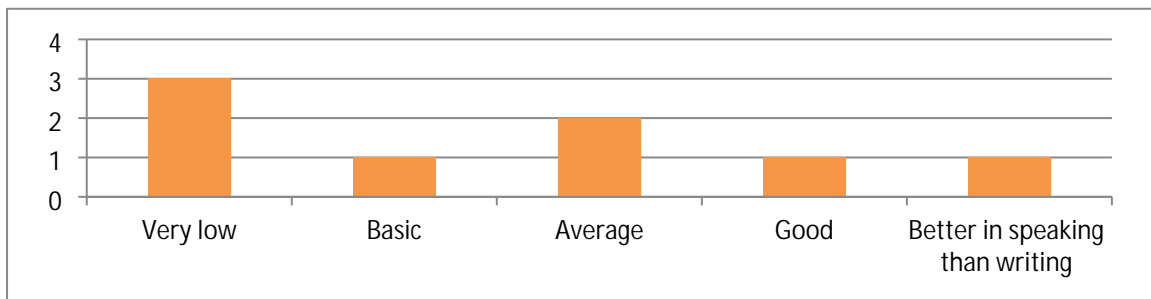
Years of experience	Number	Percentage
1-10	5	62.5%
10-20	1	12.5%
20-30	2	25%

As noticed in the table and graph above, the majority of teachers have been teaching from 1 to 10 years of experience.

Q3: levels usually taught**Table 5***Distribution of levels usually taught*

Option	Number	Percentage
MS1	7	87,5%
MS2	6	75%
MS3	6	75%
MS4	3	37,5%

The results show that a total number of (87,5 %) of middle school teachers teach first year while an equal (75%) of teachers usually teach second and third year. The rest (37,5%) which is the minority of teachers have taught the fourth year. The difference between MS1 and MS4 rate is because first year usually have more learners. Moreover, teachers of MS4 are the more experienced teacher.

➤ **Section two: Vocabulary acquisition****Q4: Could you describe pupils' level in speaking/ writing English?****Figure10***Third year learners' level*

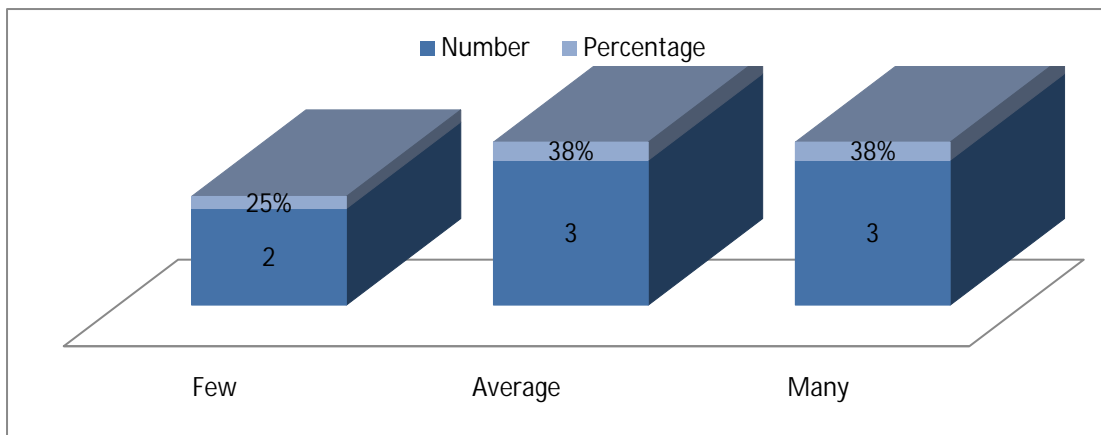
According to the results, the level of third year students can vary from one pupil to another. However, the majority of teachers agree that the learners' level is very low at

vocabulary with (37,5%). Only a percentage of (25%) of the population have an average level while the rest are either of a basic or good with an equal percentage of (12,5 %). Also, a percentage of 12,5% of the population are better in speaking than writing. This question investigates whether the advocated method is compatible with the various levels of learners or it only targets a specific level.

Q5: participation of pupils in class?

Figure11

Percentage of pupils' participation

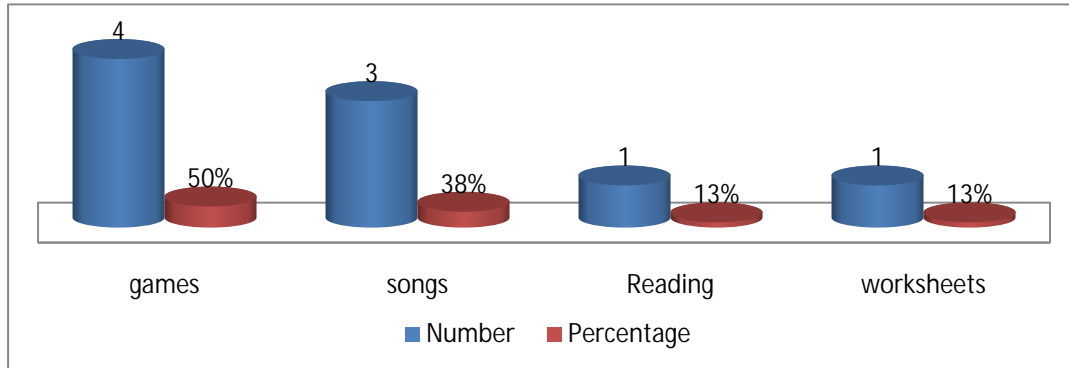


According to the results, the participation of students is between average and good (38%) whereas only a small number of students (25%) do not participate in class. In result, it can be deducted that despite the low level of learners, their participation rate is impressive.

Q6: How do Ls prefer to learn?

Figure12

Preferable methods for Ls

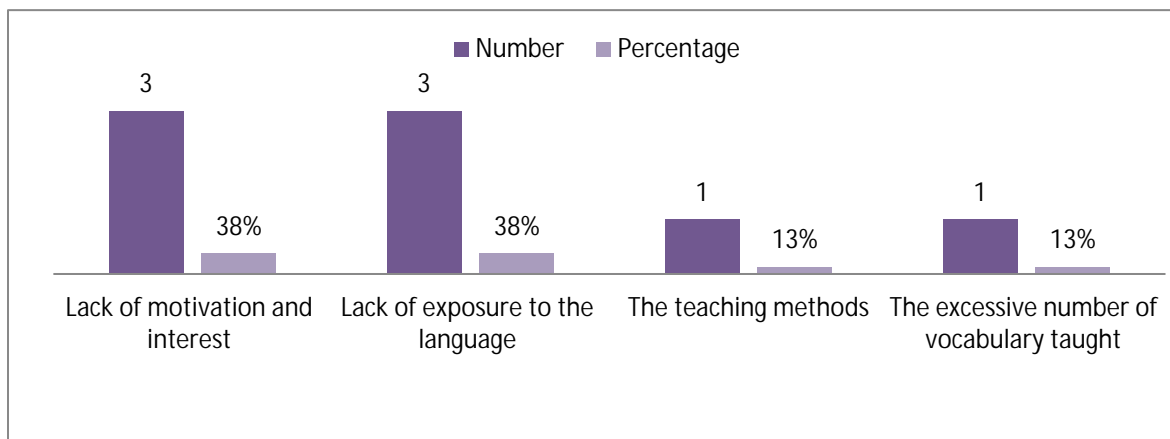


The table illustrates that most pupils prefer games as their favourite method of learning with almost (50%) of them. In the other hand, pupils who prefer songs represent an average of 38% while the remaining average of 13% is divided between those who prefer reading and worksheet. That is, learners tend to like be active and have fun while learning.

Q7: what do you think that hinders learners from acquiring new vocabulary?

Figure13

Percentage of what hinders pupils' vocabulary acquisition



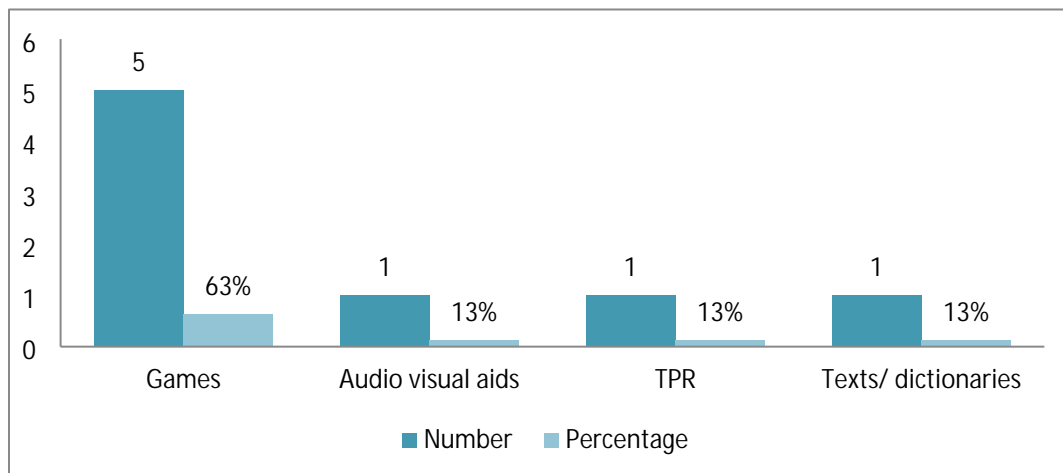
It is apparent in the table above that 38% of pupils either lack motivation or exposure to the L2. Meanwhile, the remaining 13% is divided to two categories. The first one includes pupils

who have a problem concerning the teaching method whereas the other 13% of the number problem is the excessive amount of vocabulary.

Q8: What kind of activities do you use to teach vocabulary?

Figure14

The activities used to teach vocabulary



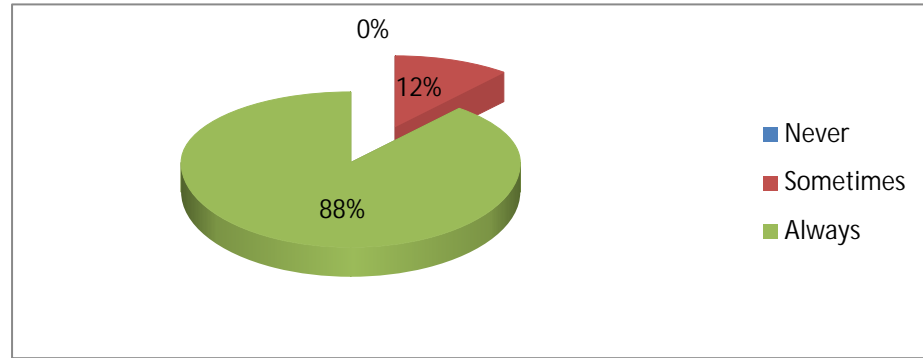
The graph above demonstrates that the majority of teachers (63%) tend to use games to teach vocabulary while the rest of them with a percentage of 13% use other types of activities such as TPR, audio visual aids and texts. That is, the nature of games makes them easier to implement in the language classroom.

➤ Section Three: Educational Language Digital Games

Q9: how often do you use games in class?

Figure15

Frequency of using games

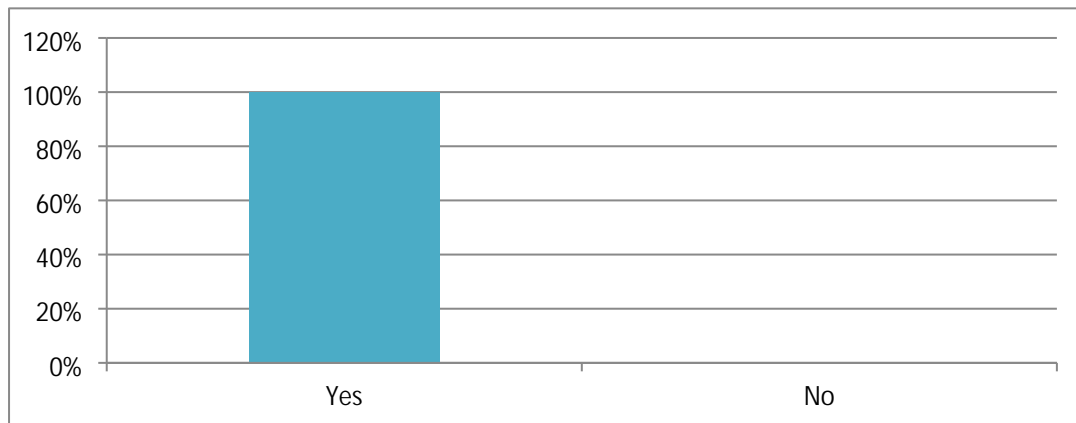


Regarding this question, it is noticed that 88% of the teacher use games as a teaching tool regularly. Some teachers often use games with a percentage of 12%. However, none of the participants “never” adopted games in their classrooms.

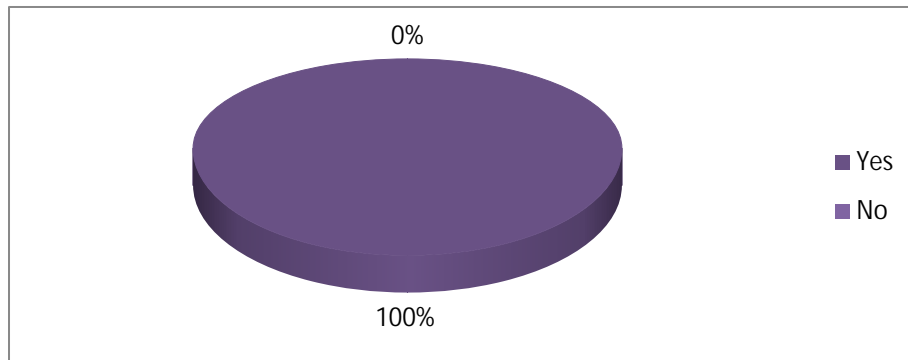
Q10: Are digital games a good material to motivate and improve their vocabulary and level consequently?

Figure16

Teachers Point of view on games

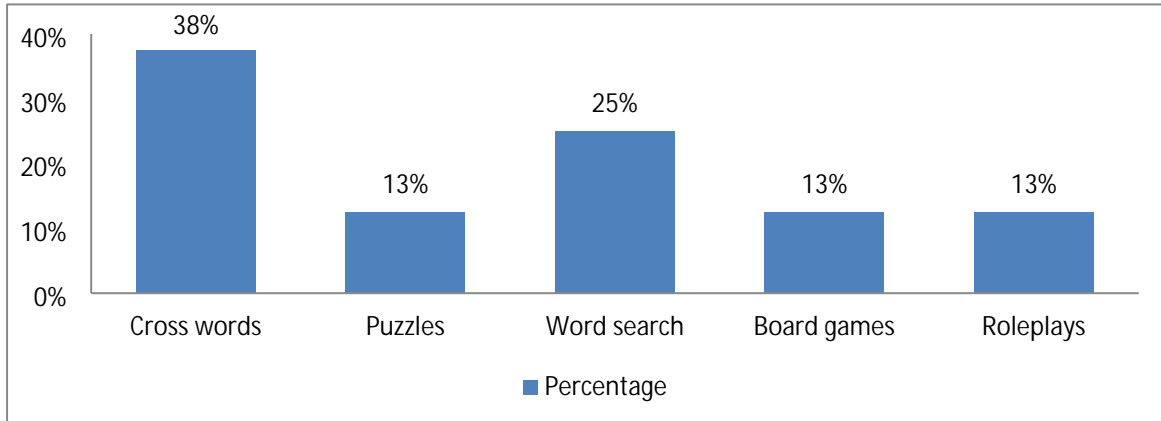


The graph shows that teachers, with a percentage of 100 %, agree that games are a good material to motivate and improve the vocabulary and level of learners.

Q11: Is there any difference between using educational language games and other materials?**Figure17***Difference between games and other materials*

According to the figure, all of the participants with a percentage of 100% have agreed that there is a difference between using digital games and other materials. Moreover, when the teachers are asked to mention the difference, they have clarified that learners are motivated to learn using digital games. Additionally, the challenging nature of games is another factor that makes it more distinctive than other activities. Therefore, educational language digital games are significant and practical in the vocabulary acquisition process.

Q12: which type of digital games do you use? why?**Figure18***The types of games*

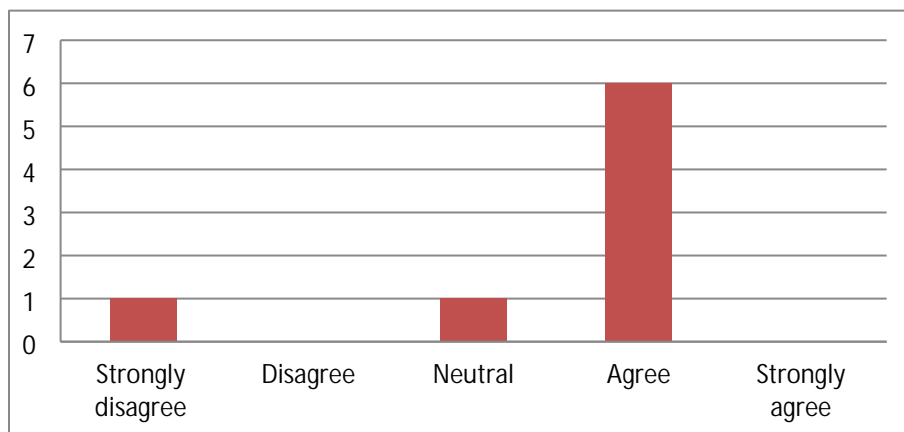


Addressing the question and the given result in the graph above, the teachers mostly use the traditional games such as cross words, puzzles and word search. However, there is relativity in the use of such activities. That is, 38% of teachers tend to apply cross words as a teaching tool in their lessons. Word search ranks second in chart with a percentage of 25%. In short, teachers do not take the risk of trying new games and stick to the traditional and usual type of games.

Q13: Are digital games effective for vocabulary learning?

Figure19

Effectiveness of digital games in vocabulary acquisition

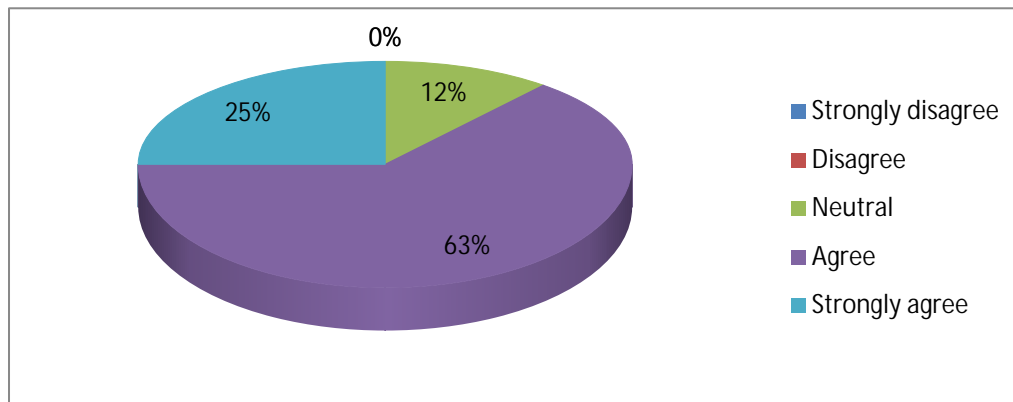


Addressing this question, the viewpoints of teachers have been different. It can be noticed in the graph above that six teachers “agree” on the effectiveness of digital games for vocabulary acquisition. However, one teacher “strongly disagrees” with the statement meanwhile another teacher has stayed “neutral”. That is, teachers who strongly agree are the ones who are applying digital games and they are aware of the outcomes of this method.

Q14: Do digital games help to improve other skills?

Figure20

Impact of digital games on other skills



The shape above illustrates that digital games help develop other skills. There are 5 teachers who have “strongly agreed” with the statement with a total percentage of 63%. However, one teacher is “neutral” whereas the rest 25% “strongly disagree” on the statement.

Q15: What are the factors that affect the decision of choosing digital games?

In this question and considering the selection of digital games for an effective learning environment, teachers take into account several key factors. These factors have been identified through the responses of the teachers to ensure an effective learning process and appropriate digital game. They include the following considerations:

- Ls level
- Ls needs
- Lesson objective
- Cultural and social background of Ls
- Teacher knowledge of the game

Q16: What are the challenges faced in teaching English using digital games? Explain.

Concerning this question, the eight teachers have claimed that the lack materials are the main obstacle that prevents them from adopting digital games in their classrooms. Moreover, the large classroom size hinders them from applying digital games. That is, it refers to the crowded classrooms where there are 40 to 50 pupils in one class. Time is another factor that some teachers consider when they think about implementing games.

4.6 Discussion of Main Results

As previously mentioned in the analysis, the purpose of the questionnaire is to evaluate teachers' perspectives on vocabulary acquisition and the use of educational language digital games in the EFL classroom, as well as the quasi-experiment. The questionnaire is distributed online to a total of eight teachers to investigate the topic of inquiry, specifically the integration of educational language digital games in the classroom. Furthermore, the experiment is successfully conducted with third-year middle school learners, with a total of 36 pupils participating. This experiment has aimed to explore the effectiveness of educational language digital games in enhancing vocabulary acquisition among EFL learners.

It is important to note that the results of both the questionnaire and the experiment will provide valuable insights into the potential benefits and drawbacks of incorporating educational language digital games into the EFL classroom. These findings can inform future teaching

practices and contribute to the ongoing development of effective language learning strategies. That is, this study highlights the significance of exploring innovative approaches to language learning, such as the use of digital games. By examining the perspectives of teachers and the outcomes of the quasi-experiment, we can gain a deeper understanding of the potential impact of educational language digital games on vocabulary acquisition in the EFL classroom.

First and foremost, it is important to address the challenges that third-year middle school learners face in acquiring vocabulary. A percentage of 37.5% of teachers have observed that learners' proficiency in the English as a Foreign Language (EFL) classroom is quite low. According to these educators, this low percentage is closely linked to the lack of motivation and exposure to the EFL outside of the classroom. Consequently, teachers have found that incorporating educational language digital games into their teaching methodology is an effective way to maintain learners' motivation and attention. The results indicate that there is a significant difference between using digital games and other materials in the classroom. A remarkable 63% of teachers have noticed that learners are more motivated to learn when digital games are implemented. Despite the learners' low level and the challenges they face, they remain enthusiastic about participating in the EFL class. In fact, their participation is on par with the average, with a percentage of 38% each. That is, it is clear that incorporating digital games into the EFL classroom can be a powerful tool for motivating learners and enhancing their vocabulary acquisition. By addressing the challenges those learners face and providing them with engaging and interactive learning experiences, educators can help their students achieve greater success in their language learning process.

In order to ensure the credibility and accuracy of the study, the participating teachers are asked regarding the levels they typically instruct. This is done to determine the relevance and

usefulness of their responses to the research. It is noteworthy that nearly 75% of the teachers surveyed have experienced teaching or are currently instructing MS3 level, which is the focus level of the study.

The analysis conducted reveals a significant increase of nearly 3% in student achievement following the treatment. Specifically, the percentage of correct answers in the post-test exceeded that of the pre-test. Prior to the treatment, learners answered only 53% of questions correctly. However, after the treatment, participants scored an impressive 74% of correct answers, representing a 21% increase in correct responses. These results demonstrate the effectiveness of educational language digital games in enhancing vocabulary acquisition for MS3 learners. Five teachers have agreed to incorporate this method into their teaching activities, and learners have expressed a preference for digital games as a teaching tool. However, it is important to note that the selection of game material should be carefully considered. Teachers must ensure that educational games align with the lesson objectives and are appropriate for the learners' level. Familiar games such as crosswords, puzzles, and word searches are commonly used, but the level of the learners must be taken into account when designing the game. The study's analyses confirm that the use of educational language digital games enhances vocabulary acquisition, and participants strongly agree that games increase the number of vocabulary words learned in the EFL classroom. Some participants in the study have implemented educational language digital games as a pedagogical tool in their EFL classes, highlighting the helpfulness of games in facilitating the learning process. The findings of this study provide valuable insights into the effectiveness of educational language digital games in enhancing vocabulary acquisition for MS3 learners. The use of digital games as a pedagogical tool is widely accepted by both teachers and learners, but careful consideration must be given to

the selection of game material to ensure relevance with lesson objectives and appropriate level of difficulty.

The incorporation of digital games into language classrooms has been shown to be a valuable pedagogical tool for vocabulary acquisition. However, many teachers have expressed concerns regarding the obstacles that prevent them from utilizing them. One of the primary challenges is the lack of materials available in most middle schools, which makes it difficult for teachers to apply digital games into their lessons. For example, many schools do not have access to the internet, and there is a limited number of Datashows available. Additionally, the large classroom sizes in many schools make it challenging to implement digital games as a teaching tool. Time constraints are also a factor that is closely linked to classroom size. It is essential to recognize the significance of games in language learning and to address the challenges that hinder their implementation. By providing teachers with the necessary resources and support, we can create an environment that fosters effective acquisition through the use of games.

4.7 Conclusion

This chapter focuses on the analysis of data and the discussion of its findings. The data is collected through two different research instruments, namely a quasi-experiment and teachers' questionnaire. The gathered data is analyzed both qualitatively and quantitatively to ensure reliable results. In the following chapter, we will address the limitations of the study and propose recommendations to overcome the identified problems. These recommendations will be based on the insights gained from the data analysis and will aim to provide practical solutions to the challenges faced. Overall, this chapter provides valuable insights into the effectiveness of

different research instruments and highlights the importance of thorough data analysis in obtaining reliable results.

General Conclusion, Limitations of the study and Recommendations

1 General Conclusion

The primary objective of this study is to investigate the effectiveness of educational language digital games in enhancing vocabulary acquisition in middle school students learning a foreign language. The research is conducted at Alia Ali Ben El- Ammari middle school among third-year pupils. To achieve our goal, we first have presented a theoretical framework consisting of two main sections. The first section of the chapter covers basic concepts of vocabulary, including an overview, definitions, principles, and strategies in teaching vocabulary. The second section of the same chapter focuses on educational language digital games, highlighting their definitions, types, and implementation.

The second chapter of the study involves testing the hypotheses formed, including analysis and interpretation of the data through an experimental design and a teachers' questionnaire. After an in-depth analysis, the results have confirmed the hypotheses given. Both test results have revealed a significant improvement in students' achievement, which is attributed to the effectiveness of the training sessions they received, where games are adopted. Students in each session have showed higher performance in terms of acquisition, motivation, and interaction, reflecting the great physical and psychological influence of the proposed tool. The questionnaire results showed that teachers are highly aware of the use of language games, highlighting their importance and effectiveness in their classes and on their students' learning process. Games create fun, challenge, creativity, motivation, and inspiration in their classes. Besides, teachers have mentioned that this method reduces their students' difficulties in learning vocabulary. It is true that teachers' use of this tool is primarily based on educational purposes, reflecting their great responsibility in its implementation. They are restricted with certain factors

and aspects of selecting the appropriate flexible game to suit the students' nature. Hence, they highlight the importance of the regular use of games to avoid any negative effects.

In conclusion, this study provides evidence that digital games are an effective tool in enhancing vocabulary acquisition in middle school EFL learners. The results of this study can be used to inform future research and guide the implementation of digital games in language learning classrooms.

1.1 **Limitations of the study**

As researchers, we undoubtedly encounter certain limitations that hinder our study. Firstly, the main issue is learners' discipline, which made it difficult to ensure full class participation due to high absenteeism rates. Additionally, unplanned holidays made scheduling post-test session a challenge, resulting in interruptions and rescheduling. Furthermore, the lack of experience in organizing and selecting appropriate activities for the experiment posed a significant obstacle. Despite these challenges, we remained committed to our research and worked diligently to overcome these obstacles. We recognize that these difficulties are not uncommon in the field of research, and we have taken steps to address them in future studies. Moreover, we have remained dedicated to advancing our understanding of the inquiry and contributing to the broader academic community.

1.2 **Recommendations**

Given the significance of mastering vocabulary, we highly recommend seeking out:

1. Effective and dynamic teaching methodologies to enhance learners' lexical knowledge.

Additionally, we suggest implementing supplementary strategies to facilitate vocabulary acquisition.

2. Exploring the correlation between vocabulary mastery and other essential skills, such as listening, speaking, and writing, would be a fascinating avenue for further investigation. By doing so, we can gain a more comprehensive understanding of the role vocabulary plays in language acquisition and proficiency.
3. The application of educational language digital games needs to be equipped with the appropriate supporting materials because it mainly aims to involve students in real life situations.
4. With the emergence of English in primary school, it will be very effective to adopt educational language digital games to teach young learners.

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Appendices

Appendices**Appendix01: The teachers' questionnaire**

Dear teachers, you are kindly requested to answer the following questions, which aim to investigate the influence of digital games on enhancing vocabulary acquisition of the third year middle school learners.

Section one: General information**Q1. What is your position?**

a) Teacher b) Inspector

Q2. Years of experience.....**Q3. What are the levels you usually teach?**

a) MS1 b) MS2 c) MS3 d) MS4

Section two: Vocabulary acquisition**Q4. Could you describe your learners' level in speaking/ writing English?**

.....
.....

Q5. Participation of learners in class

Few

Average

Many

Q6. How do pupils prefer to learn?

.....
.....

Q7. What do you think that hinders learners from acquiring new vocabulary?

.....

.....

Q8. What kind of activities do you use to teach vocabulary?

.....

.....

Section three: Educational language digital games

Q9. How often do you use digital games in class?

- a) Never
- b) Sometimes
- c) Always

Q10. Are digital games a good material to motivate and improve their vocabulary and level consequently?

1. Yes 2. No

Q11. Is there any difference between using digital games and other materials?

.....

.....

Q12. Which type of digital games do you use? Why?

.....

.....

Q13. Are digital games effective for vocabulary learning?

Strongly disagree Disagree Neutral Agree Strongly agree

Q14. Do digital games help to improve other skills?

Strongly disagree Disagree Neutral Agree Strongly agree

Q15. What are the factors that affect the decision of choosing educational language digital games?

.....
.....

Q16. What are the challenges faced in teaching English using digital games? Explain.

.....
.....

Appendix02:**Number:**..... **Group:**....**Activity One: Listen and fill in the gaps to finish the story**

Once upon a time , a fox and a stork(live) in a jungle.They(are) good friends.But the fox(is) selfish.One day he(think) of a plan to tease the stork. The fox.....(invite) the stork for lunch. The stork(accept) his invitation happily and(reach) on time for lunch. Now the fox(play) a trick and(present) food in a flat plate. The fox (finish) his food but the stork(is) not able to have his food. He(remain) hungry. The fox(give) a phony smile and said , " Ohh I am sorry you don' t like the food. The stork(say) , " the food.....(is) good." The stork(think) to take the revenge. He(invite) the fox for lunch the next day . The fox(accept) his invitation and(go) to the stork's place.The stork(prepare) the food in a narrow necked long jar. The stork(finish)his food but the fox(is) not able to eat the food. The fox(can) not enter his mouth to the jar and he(is) hungry. The fox(realize) that his behaviour and his phoney smile(is) wrong.

Activity Two: Match each word with its appropriate definition

<input type="checkbox"/>	butcher's	a. living area within a building
<input type="checkbox"/>	Office	b. small one story house
<input type="checkbox"/>	greengrocer's	c. apartment
<input type="checkbox"/>	Station	d. a place which sells various goods; store
<input type="checkbox"/>	post office	e. a shop which sells bread and pastries
<input type="checkbox"/>	Apartment	f. a shop which sells various types of meat

<input type="checkbox"/>	Park	g. a shop which sells fruit and vegetables (British English)
<input type="checkbox"/>	Sweetshop	h. a shop which sells candies and various sweet goods
<input type="checkbox"/>	police station	i. an area where cars are placed while not in use
<input type="checkbox"/>	Pub	j. a palace, usually where kings and queens lived
<input type="checkbox"/>	Bungalow	k. a workplace in a building
<input type="checkbox"/>	Flat	l. public garden, play area
<input type="checkbox"/>	baker's	m. a public office responsible for sending letters by mail
<input type="checkbox"/>	Castle	n. a place where one can buy alcoholic beverages
<input type="checkbox"/>	Shop	o. a stop for transportation; a base
<input type="checkbox"/>	car park	p. a base for the police department

Activity Three: Colour the opposite of each word

1	Behind	before	into	After
2	Play	dream	pay	Work
3	come in	fall down	get lost	go out
4	Laugh	cry	shout	Like
5	on time	on foot	at once	by plane
6	Bring	repair	take	See
7	Everyone	someone	who	Nobody
8	Sun	wind	summer	Rain
9	take off	put on	wear	Carry
10	Hate	like	love	Cry
11	Trousers	tie	skirt	Coat
12	Blue	white	green	Black
13	Long	tall	round	Short
14	Nice	new	sure	Old
15	Clean	nice	dirty	Bad
16	Boring	funny	silly	Ready
17	Under	between	over	Onto
18	Thank you	You're welcome	How are you?	Hello

الملخص

من المسلم به على نطاق واسع أن اكتساب المفردات هو حجر الزاوية في تعلم لغة ثانية أو لغة أجنبية. في ضوء ذلك ، تهدف دراستنا إلى التحقيق في فعالية تنفيذ الألعاب الرقمية التعليمية للغة لتعزيز اكتساب المفردات ، فضلاً عن تأثيرها على تحفيز الطلاب لتعلم هذه المهارات. لاختبار الفرضيات ، تم استخدام تصميم شبه تجريبي ، حيث يتعرض 36 تلميذاً من الصف الثالث للتعليم المتوسط بمدرسة عليية علي بن العمري المتوسطة بسيدي غزال بسكرة للاختبار الأولي والتدريب والاختبار النهائي. بالإضافة إلى ذلك ، تم إجراء استبيان لأساتذة التعليم المتوسط والمفتشين. أكدت نتائج الدراسة الفرضيات على جميع المستويات. على وجه التحديد ، وجد أن الألعاب الرقمية لها تأثير كبير على تعزيز اكتساب الطلاب للمفردات اللغوية ، فضلاً عن تأثيرها الملحوظ على الجو العام للفصل الدراسي وتحفيز الطلاب. تشير النتائج إلى أن دمج الألعاب الرقمية في تعلم اللغة يمكن أن يكون وسيلة فعالة وجذابة لتحسين اكتساب المفردات.

الكلمات المفتاحية: الألعاب الرقمية التعليمية ، اكتساب المفردات ، متعلمي اللغة الإنجليزية كلغة أجنبية ، الفعالية