

How Can Educational Computer Games (Super-Dictionary Game) Enhance Students' Vocabulary Acquisition for Intermediate Level?

كيف تؤدي ألعاب الكمبيوتر (Super-Dictionary Game) التعليمية الى تعزيز اكتساب

الطلبة لمفردات اللغة الإنجليزية في المراحل المتوسطة العنوان باللغة العربية

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Received: .21/06/2022

Accepted: 28./06/2022

Published:30/09/2022

Abstract: This inquiry research was conducted in public secondary school for girls in AL-balqa. Eighteen students of 9th graders are the participants .All of them responded to the need analysis questionnaire, and all of them were assessed by pre-test, work sheets, observation and self –assessment check list .All the inquiry lessons took place at the computer lab where six computers are connected with internet. The steps that I followed to investigate the effectiveness of educational computer games (super-dictionary game) on enhancing students' vocabulary acquisition started with referring to the relevant literature. Then I discussed the process of implementation taking into consideration the ethical aspects .After that I wrote the findings and the reflection part.

Keywords:super-dictionary game; vocabulary acquisition; educational computer games;

ملخص: تم إجراء هذا البحث الاستقصائي في المدرسة الثانوية الرسمية للبنات في البلقاء. شارك في الدراسة ثمانية عشر طالباً من طلاب الصف التاسع ، كلهم أجابوا على استبيان تحليل الحاجة ، وتم تقييمهم جميعاً من خلال الاختبار الأولي ، وأوراق العمل ، والملاحظة ، وقائمة المراجعة الذاتية ، وتم إجراء جميع دروس الاستفسار على الكمبيوتر. مختبر حيث ستة أجهزة كمبيوتر متصلة بالإنترنت. بدأت الخطوات التي اتبعتها للتحقيق في فعالية ألعاب الكمبيوتر التعليمية (لعبة القاموس الفائق) في تعزيز اكتساب الطلاب للمفردات بالرجوع إلى الأدبيات ذات الصلة. ثم ناقشت عملية التنفيذ مع مراعاة الجوانب الأخلاقية ، وبعد ذلك كتبت النتائج وجزء التفكير.

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1. INTRODUCTION

Today's educators, especially language educators understand the importance of integrating technology into learning. Also, how technology has become an effective learning tool makes learning more fun and useful at the same time. Specifically, in the field of educational computer games that provides the learners with a variety of strategies to practice English language vocabulary such as vocabulary exercises and dictionary games. This correlation between vocabulary acquisition and educational computer games comes from the fact that "in learning a foreign language, vocabulary plays an important role. It is one element that links the four skills of speaking, listening, reading and writing all together"(Azar 252).

During my observation on several English classes at public school, I noticed that the students' reading, listening, speaking and writing skills weren't as expected. And I concluded that they aren't exposed enough to the basic element in learning English which is vocabulary. Because the students either ask the teacher to explain the meaning of vocabulary in Arabic or they go to the glossary to find the meaning without making any effort. As a result, they directly forget the vocabulary after the class .Thus ,the need to go beyond traditional methods in teaching vocabulary, provoked me to use class tools website to design an educational computer game(super-dictionary game).The context of this game is chosen based on the student's book content .And its aim is to enhance students' vocabulary acquisition and achieve what Derakhshan and Khatir mentioned in their study "by using vocabulary games ,learning process is going to be more a valuable ,this method can make vocabulary learning more enjoyable ,so it can help students to retain target words more quickly"(40). Also, this inquiry focuses on one of the topics that we discussed in (PCK) unit which is related to introducing a new vocabulary.

Based on the above mentioned, this inquiry research was conducted in public secondary school for girls in AL-balqa. Eighteen students of 9th graders are the participants .All of them responded to the need analysis questionnaire, and all of them were assessed by pre-test, work sheets, observation and self –assessment check list .All the inquiry lessons took place at the computer lab where six computers are connected with internet. The steps that I followed to investigate the effectiveness of educational computer games (super-dictionary game) on enhancing students' vocabulary acquisition started with referring to the relevant literature. Then I discussed the process of implementation taking into

consideration the ethical aspects .After that I wrote the findings and the reflection part.

2. LITERATURE REVIEW

2.1 LITERATURE REVIEW

This part of inquiry presents examples of studies that discussed the educational computer games as an approach to learn and teach vocabulary.

At the beginning, it is essential to give the games' definition before defining the educational computer games itself. According to Alcorn as cited in Donmus , "games are a kind of entertainment that require participation ,competing and have special rules"(1498).While Donmus defined the games as a tool that improves the individuals' mentality by giving them certain rules, certain time and involves them in a competition with themselves and other in order to fulfill specific goals(1498).However ,Cankaya and Karamete defined the educational computer games as applications that help students to learn by practicing and entertaining ,it is the best way motivates students to be responsible for their learning and it can be used as alternative instructional approach(146). Additionally ,Bakar and Nosratirad argue that "computer games can generate motivation and pleasure for learners as they are loaded with learning materials that learners can attempt especially for learning the subject and content that are most difficult to teach either they are dull or complicated"(235). I think the most common thing between all these definitions is the idea of entertaining .And this idea was suggested by Kuzu and Ural as cited in Donmus the combination between education and games can make the learning environment entertaining (1499).I totally agree with them because the students who learn through playing can feel comfortable and motivated .And the idea of playing could reduce their anxiety towards the difficult or complex content.

According to Schmitt, as cited in Riahipour and Saba vocabulary is an example of content some students get frustrated while they are learning it " learning vocabulary is complex and multidimensional"(1258). I agree with them if we take into consideration the traditional methods in teaching vocabulary .In traditional methods as I have observed students completely depend on the teacher in order to explain or justify the vocabulary which gives the students a sense of bored .This is also confirmed by Riahipour and Saba study .They argue that "traditional activities get students involved in a boring process of memorization of long vocabulary lists, derivation

,repetition of words, translation , fill in the blanks exercises ,etc" (1259).This proves what I have noticed during my school experience .For this purpose , Donmus asserts that "the value of educational computer games has been increasing in language education since they help to make language education entertaining"(1497). I believe that this value is very important in learning vocabulary which is considered the building block of language. So when students enjoy leaning this building block, they will be curious to use it. So to apply this value there are many educational websites which are designed especially to create educational vocabulary games such as the class tools website. Additionally, Uzun asserts that computer and games should not be neglected in FL education (47). Furthermore, Derakhshan and Khatir stated that "different studies reveled that games are beneficial in vocabulary learning because they enhance students' ability to memorize words, encourage students' interaction and enhance students' motivation"(39). I believe it is beneficial for me to read all these advantages of educational computer games before starting my inquiry. By reading this I can have a pre-vision about how the interaction of students would be with the super-dictionary game. Thus, when I designed the assessment tools, I took into my consideration the students' interaction and the retention of words as criteria of assessment.

On the other hand ,Wheeler as cited in Donums argues that "computer games are not useful for all learner and learning, however, when it designed effectively, it creates a reliable cooperative learning environment "(1499).I agree with him because both the design and content are very important to achieve the educational target of the game. Teachers can avoid this limitation by choosing the suitable game. I concluded that using class tools website to design my inquiry game is good choice .Since this website provides the teachers with different styles of educational games that could attract students 'attention. A Similar idea was expressed by Uzun who asserts that integrating educational computer game is a good instructional approach if it is well planned and under the teacher control (46).This limitation helped me to plan my lessons taking into consideration the observation as assessment strategy. The other limitation was expressed by Yip and Kwan .They thought because drill and practice games depend on repeating the same vocabulary in each level of the game, this could cause boring. But when they took the students' view towards the game, they said that this repetition helped them to memorize the vocabulary .Also, the simplicity of the game made them more confident (245).This provoked me

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to us super-dictionary game because it has the same characteristics of Yip and Kwan game.

Finally, from all studies above it turned out that educational computer games can enhance students' vocabulary acquisition. Thus, this inquiry comes to investigate "How can educational computer games (super-dictionary game) enhance students' vocabulary acquisition for intermediate level?"

2.2 OVERVIEW OF PROCESS OF THE INQUIRY

This study was conducted in order to investigate how can educational computer games (super-dictionary game) enhance students' vocabulary acquisition for intermediate level? Its importance lies in the fact that "vocabulary learning is often perceived as boring by learners, especially for those who grew up in the digital age"(Yip and Kwan 223). Because of that, I decided to use educational computer games (super –dictionary game) as an instructional approach to teach four vocabulary lessons with different assessment tools for data collection .

This study was conducted in public secondary school for girls in AL-balqa, Jordan .All inquiry lessons took place at the computer lab. As a first step in implementing this inquiry, I informed the school principal and my mentor of inquiry procedures. And after eighteen students of ninth grade agreed to be a part of this study, the pre-test was designed to measure students' current level of vocabulary acquisition. The pre-test had two vocabulary questions .Students learned these vocabulary through traditional methods .The result of pre-test was compared with the worksheets' results .During the pre-test, I noticed that students hardly answered the questions, so I decided to prepare a need analysis questionnaire to understand the students' need .In this questionnaire I asked students to mention which area of English they would like to improve in and how would they like to learn vocabulary. Consequently, I started planning the inquiry lessons as a third stage in the inquiry cycle.

In the first inquiry lesson the students were exposed to the game instruction .The instruction is so simple, "the definitions will appear at the bottom of the screen .The students use mouse to shoot the word which it describes .The students' score reflects the time left on the clock at the end of the round .However, the students have only 20 round of ammo and 30 second to complete each level of the game .The game is over when the students are beaten by the clock"(class tools. net). Explaining the game'

rules is essential according to Azar, "Although games are effective in learning new words, they can't be successful if the teacher doesn't explain the tasks and roles of students clearly in playing games"(255). I agree with Azar because once students understand the rules and the target of the game, they will be focused while playing .As follow -up, I divided students into small groups (groups of four) .While students were playing, I used a check list to observe their interaction with the game .And at the end of the lesson students were assessed by work sheet. (Appendix A , lesson 1).

Students in the second lesson used the game to confirm the meaning of the words after they listened to them in context. For this lesson I created a self –assessment tool which gave the students three options (I didn't see this word before, I saw this word ,but I am not sure about its meaning and I saw this word before and I know its meaning) .(appendix A, lesson 2).

The third lesson was a bit different because the students were used to the game .The students began to compete each other by comparing their answers and scores. The check list and work sheet were the assessment tools. (Appendix A, lesson 3).

After given the fourth inquiry lessons, I created a post-questionnaire to know the students' perspective towards the game. At this point, the data of pre- test, need analysis questionnaire, observation check list, worksheets and post –questionnaire were collected and analyzed to prove if educational computer games (super-dictionary game) can enhance the students' vocabulary acquisition.

3. ETHICAL CONSIDERATIONS

Ethical consideration is a root of any educational research. It is paramount for all research stages. In addition , it is commonly believed that "teachers act as advocates for respectful research "(ethics in research session, TEPD).I also believe in this, so this inquiry was built on several ethical aspects .For instances, protecting confidentiality, respecting autonomy, collecting consents, minimizing harm ,treating people equitably and sharing the result with participants involved.

As a primary step before starting investigation, I first informed the school principal and my mentor of the inquiry process including: the rational, procedures, number of lessons and place and the participants of inquiry. The consent letter was signed by both. (Appendix H). As well as I provided the ninth graders with a detailed explanation about the inquiry. In order to protect their confidentiality and autonomy, I notified them that this inquiry wouldn't come to evaluate them, so they could answer without feeling embarrassing. Similarly, they didn't have to write their names on

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any assessment paper. Furthermore, they were given the option to be a part of this inquiry or not

After I got the second permission, I started planning the inquiry lessons taking into consideration the teacher's semester plan to avoid any delay. Thus, the vocabulary of the game was chosen from the rest material.

Because I attended the same school in SEP3, I had a good knowledge of students' level. And I expected that not all students in the class can understand some phrases and words of pre and post questionnaire. So, to minimize the harm I decided to put students in pairs and small groups to explain to each other the questionnaire items, but at the end they had to answer individually. Also, I was observing them to guide them if they misunderstand something.

Because the inquiry lessons had to take place at computer lab, I got the permission of teacher who is responsible for computer lab. Then I arranged my lessons according to her schedule. (Appendix H). Also I got her permission to come to the computer lab five minutes earlier in order to set up the computer lab, so students could benefit from each minute of class.

During the data analysis, I was eager to be objective. For example, all students' responses were taken seriously regardless their level, the students' names were represented by symbols also I asked my mentor to observe me during one of inquiry lessons.

However, another important ethical aspect was related to academic writing, especially in the literature part. I assigned each quotation and paraphrase to the real writer by using MLA style.

Finally, the result of inquiry was shared with my mentor and the participants. In addition to sharing I encouraged my mentor to use super-dictionary game as much as she can in order to simplify vocabulary learning. Thus, I provided her with the game links, so any time students can go to the computer lab and play.

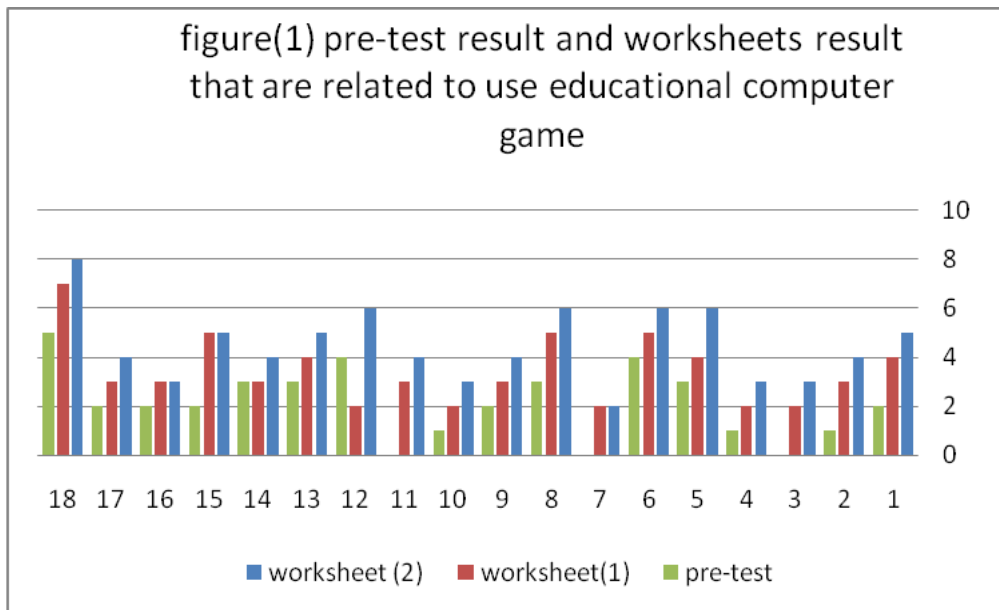
3.1 FINDINGS

This inquiry came to answer if educational computer games (super-dictionary game) can enhance students' vocabulary acquisition. The result of analyzing the data of need analysis questionnaire, pre-test, worksheets, the observation check list, self-assessment and post-questionnaire will be displayed in this session.

Before the implementation of the inquiry, the need analysis questionnaire was conducted to know students' attitudes and needs towards learning vocabulary through the game. From table 1(appendix C), it is clear the half of students chose vocabulary as an area of English they would like to improve in. And a large majority of them prefer to learn vocabulary through the game. It is also obvious; the majority of students believe that the best way to remember a new word is practicing it through the game. And some of them chose doing extra vocabulary exercises in order to improve English.

According to students' responses, it can be concluded that the students have appositve attitudes and they are passionate to use educational computer games in vocabulary learning.

Moving on the figure (1) below which shows a noticeable difference between students' pre-test marks and students' worksheets' marks (Appendix D). This reflects that using educational computer game (super-dictionary game) can increase and improve students' achievement.

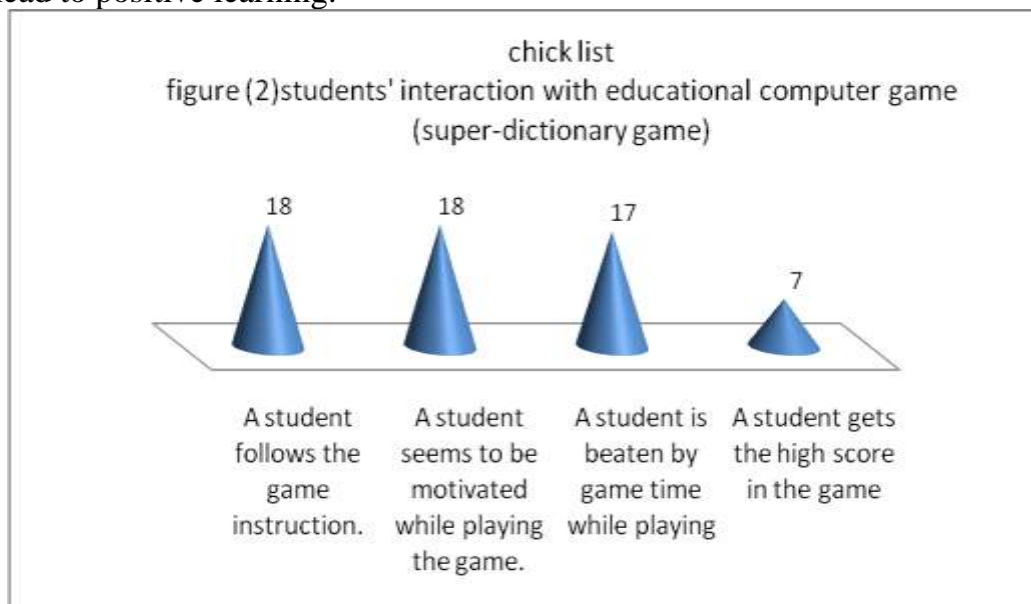


The observation check list (Appendix E) was used during the implementation of inquiry lessons in order to assess students' interaction with the super-dictionary game .The assessing criteria are (a student follows the game instruction, a student seems to be motivated while playing the game, a student is beaten by game time, and a student gets the high score in the game). Figure (2) shows that all students followed the game instruction

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.In the other context, they first read the definition then shot the word which it describes .But the limitation that I observed and Yip and Kwan indicated it " in the shooting games learners might pay attention to aiming at the moving objects than the words" (245). Another important point is shown by the figure (2) that all students seemed to be motivated while playing the game. On the other hand, the figure shows that 17 students were beaten by the game time and repeated the level of the game more than one time. This might shed the light on what Yip and Kwan found "games that required players to give a timely answer might frustrate the player as they might not have sufficient time to retrieve the word meaning"(245).Here I have to point out something, the participants of this inquiry, weren't used to using the game in learning .Thus, even though they were beaten by time, they seemed motivated all the time.

The successful criterion of an instructional approach is the positive interaction of students with this approach .So, it can be deduced that there is a positive interaction according to figure (2).This positive interaction will lead to positive learning.



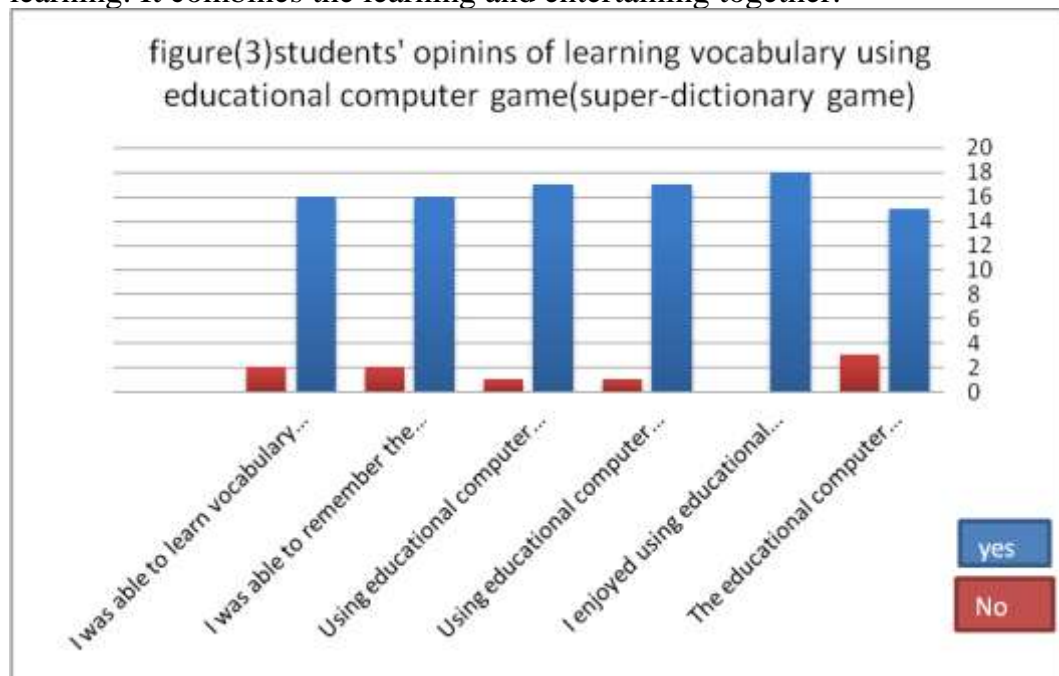
During the second and the fourth inquiry lesson, students assessed themselves by self assessment tool (Appendix F). The assessment tool included the list of vocabulary that appeared in the educational computer game (super-dictionary game). The students were given three choices (I

didn't see this word before, I saw this word, but I am not sure about its meaning and I saw this word before and I know its meaning). Most of students' answers were limited between the last two choices. This indicates that educational game can help students in retrieving the vocabulary.

Figure (3) shows students' opinions of learning vocabulary using educational computer games (super-dictionary game). This questionnaire was given after implementing the fourth inquiry lessons (Appendix G).

Based on this figure (3), it turned out the majority of students agreed that they were able to learn vocabulary better when it was presented in a game. And the same majority agreed that they were able to remember the vocabulary better after playing the game which is the main target of the game (Appendix G). This result is found in Yip and Kwan study "the learner who playing online vocabulary game could retain the learnt vocabulary for long period"(246). Also as shown in the figure the most of students asserted that using educational computer game (super-dictionary game) in test vocabulary was more fun and less stressful. Additionally, they admitted that the educational computer game helped them to become more confident and motivated. It is also clear that all students enjoyed using super-dictionary game. Moreover, the majority of students agreed that the educational computer game helped them to interact better in the class.

Post questionnaire analysis indicated that the educational computer game (super-dictionary game) has a positive impact on students' vocabulary learning. It combines the learning and entertaining together.



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Based on the above data analysis and interpretation, it turned out that educational computer game (super-dictionary game) is an effective approach that can enhance students' vocabulary acquisition for intermediate level. Even though it has some drawbacks, It puts students in a positive environment where entertaining and learning are combined. The same result is found in Yip and Kwan study" online vocabulary games as a tool for teaching and learning English vocabulary". They showed in their study result that "online games are regarded by both students and teachers as effective vocabulary learning tools"(247).

4. CONCLUSION

The aim of this inquiry is to shed the light on a new pedagogical of teaching and learning vocabulary in the 21st century. Thus, the question of this inquiry asked "How can educational computer games (super-dictionary game) enhance students' vocabulary acquisition for intermediate level?". The result of this inquiry shows that educational computer game (super-dictionary game) can enhance students' vocabulary acquisition .Since it helped students to retain the vocabulary that appeared in the game .Moreover, students stated that this game helped them to be motivated and enjoyed during the learning process.

Creating student-centered class was my major focus while I was planning the inquiry lessons. My role was a facilitator and guide. The students played the big role during the lessons. For example, students were taking each other opinions and they shared their answers with each other. In addition to that, students in this inquiry were exposed to a new pedagogical method of learning vocabulary. In the other words, they discovered how they can learn and enjoy at the same time .I think these points could be considered as the strengths of this inquiry.

Before starting the inquiry lessons, I asked students to complete the need analysis questionnaire. I felt that they appreciated this idea. Understanding students' needs gave me the starting point to begin.

Despite the good impact of educational computer game (super-dictionary game) that this inquiry proved it, there were some limitations that affected the implementation process. The first limitation was related to the time .Because our class periods are relatively short at 45 minutes, the students hadn't have enough time to play all the level of the game. Moreover,

because there were a limited number of computers that are connected with the internet, I put students into small groups (groups of four) .So; the students were watching each other until they take part in the game. Additionally, because this inquiry didn't take place at the classroom .I found difficulty to arrange my lessons according to the computer lab schedule. Thus, this inquiry can be done in the future with long periods of time for each lesson and with a good number of computers. And as alternative solution, I can provide students with the game links in order to practice this game at home as self –study.

The significant point of this inquiry is its process which begins with asking a wondering question then reading about it .This intentional and systematic process arranged my ideas and my working plan. Each stage was leading to another. Such as the literature part allowed me to read other studies that discussed the same topic .This part helped me a lot because it gave me hints about some limitations might face me in my inquiry. Adopting this process in my future career will help me and other English teachers to investigate any language issues might face the students. Thus, I would recommend teachers to adopt this process, specifically with this development of educational computer games and its role in language learning. Since according to Uzun there is no much statistical research about the effectiveness of computer games in FL education (46).

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6. Appendices

(Appendix A)
(Lesson plans 1, 2, 3, and 4)

INQUIRY OUTLINE

Name:

1	2	3	4
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INQUIRY QUESTION: How can educational computer games (super-dictionary game) enhance students' vocabulary acquisition for intermediate level?	EXPECTATIONS: WHAT DO YOU EXPECT TO FIND OUT AFTER THE INQUIRY? After students practice this educational computer game (super-dictionary game), they will easily remember the meaning of new vocabulary.
A BRIEF SUMMARY OF THE LEARNING SITUATION BEFORE INQUIRY: During my observation on several vocabulary lessons, I noticed that students either ask the teacher to explain the meaning of vocabulary in Arabic or they go to the glossary to find the meaning without making any effort .Also sometimes they ask the teacher to make the definition of each word shorter in order to remember it. As a result, they forget the vocabulary directly after	WHAT IS THE STRATEGY/APPROACH USED FOR THE PLANNED INQUIRY? Activity –based learning(educational computer game)

the class .in addition to that the students feel boring in the vocabulary lesson.	
WHAT ARE THE ASSESSMENT OPPORTUNITIES FOR THIS INQUIRY QUESTION? Questionnaire, observation, checklist, worksheets, self – assessment and exit card.	WHAT ARE THE METHODS USED FOR GATHERING EVIDENCE IN THE INQUIRY APPROACH? Observation, checklist, worksheet
A BRIEF SUMMARY OF THE CHANGED LEARNING SITUATION AFTER INQUIRY: After my first inquiry lesson, I noticed that students became more motivated while learning vocabulary. Also they felt entertaining	

INQUIRY OUTLINE

Subject/Grade: 9th grade

Learning inquiry, lesson plan:

1	2	3	4
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INQUIRY QUESTION: How can educational computer games (super-dictionary game) enhance students' vocabulary acquisition for intermediate level?	EXPECTATIONS: WHAT DO YOU EXPECT TO FIND OUT AFTER THE INQUIRY? After students practice this educational computer game (super-dictionary game), they will easily remember the meaning of new vocabulary.		
A BRIEF SUMMARY OF THE LEARNING SITUATION BEFORE INQUIRY: During my observation on several vocabulary lessons, I noticed that students either ask the teacher to explain the meaning of vocabulary in Arabic or they go to the glossary to find the meaning without making any effort .Also sometimes they ask the teacher to make the definition of each word shorter in order to remember it. As a result, they forget the vocabulary directly after the class .in addition to that the students feel boring in the vocabulary lesson.	WHAT IS THE STRATEGY/APPROACH USED FOR THE PLANNED INQUIRY? Activity –based learning(educational computer game)		
WHAT ARE THE ASSESSMENT OPPORTUNITIES FOR THIS INQUIRY QUESTION? Questionnaire, observation, checklist, worksheets, self –assessment and exit card.	WHAT ARE THE METHODS USED FOR GATHERING EVIDENCE IN THE INQUIRY APPROACH? Observation, checklist, self –assessment ,		
A BRIEF SUMMARY OF THE CHANGED LEARNING SITUATION AFTER INQUIRY: After my			

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second inquiry lesson, I noticed that some students understood the game instruction more and they tried to explain to each other the definition of each word.

***Assessment Opportunities:**

-Self-assessment () Peer-assessment () Checklist () Rubric ()
Questionnaire () Others ()

LESSON/TIMING	PROCEDURE	INSTRUCTIONAL STRATEGY	ASSESSMENT <i>(Strategy/ Tool)</i>	RESOURCES
3 min	Starter: A teacher asks students to remind her about the game instruction.	Direct instruction	-	Computers

Student	Pre-test 8 marks	Worksheet(1) 8 marks	Worksheet (2) 8 marks
S 1	2	4	5
S 2	1	3	4
S 3	0	2	3