A Literature Review on the Impact of Online Games in Learning Vocabulary

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Abstract- This study has been prepared with the aim of to find out the (a) relationship between online games and vocabulary learning and (b) whether gender effects vocabulary learning through the online games. As one of the outcomes of technology, computer assisted language learning (CALL) increased the popularity of using computers in the classroom environments as a tool for learning languages. Along with the development of internet, the games started to appear in the form of online games. Correlatively this paper investigated five international articles related to online games and vocabulary learning from Iran, Turkey and China in which different methods have been employed including quantitative and qualitative measurements. The evaluation of the articles showed that adopting online games in language teaching for vocabulary learning is more efficient than rote learning; however the success depends on the gender. Male students do better in gaining vocabulary through online games comparing to female learners.

Index Terms- CALL, online games, vocabulary learning

I. INTRODUCTION

The world changed rapidly in the last decade. People have been seeking after new inventions and new items. Computer has been one of the biggest product of this pursuit and it has changed a great deal of things in human life: the way we think, the way we behave and the way we learn. After the introduction of CALL, teachers have brought along new learning strategies and methods into the classrooms. As vocabulary learning is one of the main bricks in language learning, teachers should be on the prowl to use the best and the most effective way to teach. Why shouldn't the prosperity of technology be put account into learning while a number of teenagers have been filling their time with computers and online games?

There are countless areas where English language learners have the possibility to learn via technology. These areas contain computer games and also social networks like Facebook, ICQ, Twitter etc. By means of finding new friends, students can practice their knowledge they have learnt in the classroom environment and create a native like environment. (see example: Muhammad Kamarul K., Norlida A. , Mohamad Jafre Z. A. *The Internet and Higher Education*. Volume 13, Issue 4, December 2010, Pages 179–187,Special Issue on Web 2.0 or Harrison, Richard; Thomas, Michael. *Identity in Online Communities: Social Networking Sites and Language Learning*. International Journal of Emerging Technologies and Society 7.2 (2009): 109-124.) Technology is so wide spread that people use them constantly. They even benefit from the

advantages of technology via their mobile phones. Thousands of applications (apps) are made for learning English. Learners can find appropriate materials according to their insufficient skills covering grammar, listening, etc. On the other side, advancements in technology has leaded online games to become popular, which also cause English to be used in the countries where games are played by users. The online games will constitute the key factor of this study in the subsequent parts.

Purpose of the Study

Since computers have been in our lives, the interest to games have increased. With the prevalence of internet it became possible to play games by online. As language learners especially young learners are interested in them, there have been an increase in researches conducted about online games in learning a language, because the biggest part if these games are programmed in English. From another side, undeniably motivation is a key concept of learning language. Therefore online games should be analysed deeper, whether it is useful in learning a language. There is no doubt that students have a lot of joy in playing, but does it work in the same way when a language is taught in classes? An overlook is needed to this concept.

1.1. Vocabulary

1.1.1. Language and Vocabulary

There is no doubt that vocabulary is the most important vehicle in learning a language. It does not matter if this language is the mother tongue or a foreign. As Wilkins states in his famous sentence: "There is not much value in being able to produce grammatical sentences if one has not got the vocabulary that is needed to convey what one wishes to say … While without grammar very little can be conveyed, without vocabulary nothing can be conveyed'' (p.97,1972). Here we understand that without vocabulary nothing can be expressed and that vocabulary is even more important than grammar. Krashan is also in the same opinion he argues that ''When students travel, they don't carry grammar books, they carry dictionaries''. (as cited in Lewis, 1993, p: 25) Once again we realize the importance of vocabulary in learning or speaking a language. We cannot say that grammar is not important, however vocabulary is one step further. "No learning can be achieved completely if the learner lack of sufficient vocabulary knowledge" (Özkiraz, 2015). "The vocabulary is central to language and critical importance to the typical language learner" (Coady and Huckin, 1997, p.5). Having learnt an amount of vocabulary the students will be able to communicate, maybe not in full sentences but they will be able

to express themselves. They will not have any problems in a supermarket or making friends in the target language environment. However, without knowing the vocabulary everything will be more difficult if the learner has no dictionary. "If language structure makes up the skeleton of language, then it is vocabulary that provides the vital organs and flesh" (Harmer,1991, p.153).

1.2 Computer-Assisted Language Learning (CALL) and Vocabulary

Since computers are in our lives a lot of things changed. Registering information became much easier and the interest of people found new areas. Computers became a need for teachers and even for the learners. Having a look to this issue from the perspective of a language teacher, they can implement computers to their lessons to be more efficient. This paper tries to explain the phases of CALL from the perspective of vocabulary learning as we discussed the importance of it.

"Behavioristic CALL, conceived in the 1950s and implemented in the 1960s and 1970s, could be considered a sub-component of the broader field of computer-assisted instruction… this mode of CALL featured repetitive language drills, referred to as drill-and-practice (or, pejoratively, as "drill-and-kill").(Warschauer and Healey,1998) Even the computers were not prevalent to that time behaviourist teacher tried to use them in language classes. However, computers seemed not to be different from parrot, which never gets tired. According to Warschauer(1996) Behavioristic CALL has the following characteristics:

- Repeated exposure to the same material is beneficial or even essential to learning
- A computer is ideal for carrying out repeated drills, since the machine does not get bored with presenting the same material and since it can provide immediate non-judgmental feedback
- A computer can present such material on an individualized basis, allowing students to proceed at their own pace and freeing up class time for other activities.

PLATO system was the first example for the instruction in the classroom. "In 1960, it was Bitzer who completed the first version of PLATO. This was the first computer system designed especially for general educational use."(Van Meer,2003) In this system as behaviourism suggests drills were used to teach vocabulary. The speed of the education was up to the students. If they knew the vocabulary well, they could pass the drill. Should they need more practice they could decide to have more exercise in it.

The next phase of CALL was the Communicative approach. It urged to the need of more authentic materials. They argued with the behaviouristic perspective while it only focused on learning through drills. However, communicative approach tries to reform the deficiency parts of behaviourism. Warschauer (1996) citates Underwood (1984, p.52) as following:

According to Underwood, communicative call:

- focuses more on using forms rather than on the forms themselves;
- teaches grammar implicitly rather than explicitly;
- allows and encourages students to generate original utterances rather than just manipulate prefabricated language;

- does not judge and evaluate everything the students nor reward them with congratulatory messages, lights, or bells;
- avoids telling students they are wrong and is flexible to a variety of student responses;
- uses the target language exclusively and creates an environment in which using the target language feels natural, both on and off the screen; and
- will never try to do anything that a book can do just as well.

According to the items above it is clear that communicative CALL is like a supporter to learn the language in an authentic way. In the communicative approach the CALL has three functions, which are Computer as a tutor (like teacher, knower of the correct answer), Computer as a stimulus (to stimulate discussion and critical thinking and Computer as tool (to use and understand language).(Mitsikopoulou,2014)

With the development of Computer systems and Internet many things become easier than the past. Along with this invention the "Integrative CALL" emerged. Just a click is enough to list thousands of information about a topic on the internet. Even during the lesson students can find different examples than the teachers present and can strengthen their practice in language. They have the chance to learn the language in an authentic way. They can find friends from different countries and can talk to them freely. This aspect of internet is called Hypermedia. It allows students to find videos, voices, texts and many more things in the target language. A good example for hypermedia program is Dustin, where the students have a simulation of a situation e.g. in the airport. (Warschauer,1996) Besides, students have access to the World Wide Web (www) and can reach to everything they want. They can watch TV programs in the target language; they can read their newspaper and download music. They have the chance to learn the vocabulary they do not encounter in a classroom environment.

1.3. Online Games

Mothers try to do the best for their children. They try to cook healthy and at the same time delicious food for them. When thinking about the classroom a teacher should do everything to teach the studentms in a way they like. Online games is one of the way students like. In the last years there is a pop in online games. So, teachers can combine online games and language learning in classrooms. Yip and Kwan (2006) express their thoughts about online games as following:

- Students and teachers alike, view online games as effective vocabulary learning tools;
- Students prefer online games as an educational aid when compared with traditional learning lessons;
- To increase students' interest and guarantee learning effectiveness, more motivating games which provide
- learners with a sense of achievement and scope for development are required;
- Teachers think that their role as researcher and facilitator has grown more prominent after employing information
- communication technology (ICT) tools.

So, we can infer that online games are helpful for learning vocabulary in language classes and they motivate students for learning. Also teachers work is facilitated and students have access to different kind of vocabularies, which they cannot account in classroom environment.

II. RESEARCH METHODOLOGY

My intent was to collect as much as possible articles relating to online games written all around the world which are proved with an experimental work. However, this paper focuses on the relationship between learning vocabulary through online games in language classes. Unfortunately, only 5 articles related to this topic could be found. Table 1 presents the list of the articles name and their place of publishing. Most of the articles origin from Iran, one of them is from Turkey and the last one comes from Japan. More information about the articles will be presented in the bibliography section.

2.1. Research Problem and Questions

This paper is not composed of the summary of the selected articles, but to prove the outcome through analytical data. Normally a literature review investigates the relevant topics to a hypothesis, however an analytical literature review tries to prove the faithfulness of the articles and then to get an out coming thesis.

The main purpose of this analytical literature review is to reveal the importance of online games in learning vocabulary. Unfortunately, there are only few studies about the issue. It is hoped that the results of this study might be the inspiration for further studies in this area, because we are living in a world in which nothing is almost possible without technology and along with the internet.

The guiding purposes of this study are the following questions:

(1) Do online games help vocabulary learning?

(2) Does gender effect learning vocabulary through online games?

Along with this literature review it is aimed that the answers to these questions will help to the future design of lessons in language classes.

2.2. Materials

	Country	Title of the article	Methods	Instruments
1.	Iran	On the Effect of Playing Digital Games on Iranian Intermediate EFL Learners' Motivation toward Learning English Vocabularies	Qualitative (Interview Observation)	L.A.Noire-video game Yes-No Questions
2.	Iran	The Impact of Online Games on Learning English Vocabulary by Iranian (Low-intermediate) EFL Learners	Quantitative (Pre-Test and Post Test) Cronbach"s Alpha	Sims, Chess Master, FIFA 2011, Counter Zero and Call off
3.	Turkey	Young learners' language learning via computer games	Qualitative (Observations and semi-structured interviews)	Knight Online World version, Counter-Strike, Grand Theft Auto: Vice City, Warcraft III: Reign of Chaos, and FIFA 08
4.	China	Online vocabulary games as a tool for teaching and learning English vocabulary	Qualitative and quantitative (Survey, interviews)	Professional Word Web and University Word Web
5.	Iran	Vocabulary and Grammar Gain Through Computer Educational Games	Quantitative (SPSS statistical software version 17)	Family and Friends 1" by Oxford University Press

Table 1: List of analysed articles

The collected materials for the literature review are presented articles (Table 1). As to see from the Table the place of publish of those 5 articles are from different countries. Most of the researches are from Iran, which has the top with the number of 3. The others are from Turkey and China. Different methods have been used in the articles: observations, surveys, interviews and tests.

2.3. Findings

2.3.1. Research Question 1

The intend of this paper is to analyse the previous findings about the relationship between online games and learning vocabulary. The data is collected from international articles. The articles will be analysed one by one. The outcome of the research question will be formulated according to the results of these articles.

Computers are in our lives since 1960s and still then many things changed. The communication became easier and the globalisation was also an outcome of this foundation. Along with the globalisation and that English language appeared to be the international language of the world, people used computers also to learnt languages, especially English. However, children are mostly not aware of the importance of the English subject. So, the teacher must help the students to learn the language in an attractive and implicit way. Online games are one of the choices and this paper will focus on this way.

Having a look to the articles, it can be said that online games help vocabulary retention in English classrooms. However, one of the articles formulated that online games have no significant influence on vocabulary learning. If we take the number of the articles into account and that one of the articles claim the opposite of the others, the influence of online games on vocabulary learning in EFL classes should be analysed deeper in the following years.

The first article to analyse is the common work of Nahid Shariarpour and Zahra Kafi a study on the impact of digital games on the motivation of Intermediate students. They start off with the opinion that rote learning of vocabularies is a boring way to learn a language. As the students spend a lot of time on playing online games nowadays, they began to investigate whether computer games or online games really raise the motivation or not. For the investigation the online video game L.A Noire is used on the intermediate students. The outcome of this paper is presented and proved via qualitative method, which are observation of the students and interviews. The interviews are made with the teachers and also with the students who took part on the investigation. Giving more information about the game L.A.Noire, it is a video crime game, where the players can reach the next level only by giving correct answers to the vocabulary problems. 15 students out of 25 students played this game before and they had some previous knowledge. The participants of the investigation played the games in 3 sessions every week of total 4 and half hour. Some of the students were eager and played some more hours. At the end of the week the Shariarpour N. and Kafi Z. (2014) asked the following yes-no questions on the interview:

- It is an enjoyable process to learn English vocabularies.
- It is very difficult for me to embed educational content to the game.
- While developing my game I need to learn new vocabularies.
- The topic of developing computer game enhanced my willingness to continue learning vocabularies.
- I believe that it will be entertaining to play with my game.
- I found digital games a motivating instructional method.
- If there wasn't any educational content I would develop the game easier.
- I tried to develop an entertaining game.
- I developed a multiplayer game.
- In the future, I want to develop new computer games.

At the end of the interviews the authors got positive reaction on the video game, while the students learnt without any stress and without any dictionary. Some of the students reported that this game is very realistic and they have to know how to communicate with other people during the game to reach the next level and this raises the motivation of the students. Even after the investigation students went on playing this game. In the 8th session the authors said that they observed the students were still using the learnt vocabulary in classroom environment. As the result of this article the authors assert that games are not only for fun but also educational (Shariarpour N. and Kafi Z. 2014).

The second article is about the impact of online games on learning vocabulary for low-intermediate students in EFL classes. The article is written by the authors: Ashraf H., Motlagh F.G., Salami M. in Iran. The study proves the usefulness of online games in learning vocabulary. Sims, Chess Master, FIFA 2011, Counter Zero and Call off were the games that are used for the research. The results are manifested with an experimental work. 24 students are randomly chosen for control and experimental group. The post test was given after 15 weeks. Problem statement of this study covers the question, whether online games help vocabulary learning or not.

They have used the Nelson Proficiency test as an instrument to select a homogenized group. The result of the proficiency test was estimated in Cronbach"s Alpha as 0.82. The result of the pre-test is in Cronbach"a alpha 0.86 and the post-test result is 0.81. According to this results there is a null-hypothesis showing that there is no significant difference between rote learning of vocabulary learning and vocabulary learning through online games. However, the answer of this research is not enough to prove the hypothesis really, because the number of students are less to decide about the effectiveness. Another criticism to this research is that there are a lot of games, which are used. So, while some of the students learn effective with an online game the others may have problems with the other game. The level of the games should be the same.

The third article's name is "Young learners' language learning via computer games" written by Irgin P. and Yıldız T. The qualitative investigation is made on young learners playing online games in internet cafes. The writers are in the view of that most of the people feel worried about playing computer games, however there are also lots of games, which can be instructive for language learners. The games are Knight Online World version, Counter-Strike, Grand Theft Auto: Vice City, Warcraft III: Reign of Chaos, and FIFA 08. The research was performed in an internet café. 10 primary and secondary school students took part. Irgin P. and Yıldız T. say:" Young learners' playing online games promotes language learning and especially vocabulary skills. They would be best advised to try to play online games that are useful resources for language learning."(2009) If we take the number of the students into account, it is clear that 10 students are too less to make a research on.

Next article is written by Yip, F.W.M., and Kwan (2006) in China with the title" Online vocabulary games as a tool for teaching and learning English vocabulary". Since CALL become popular it created a big area for learning language. This article focuses especially on teaching vocabulary through online games. For this research 100 intermediate Engineering students were chosen. For the result both quantitative and qualitative data are analysed to ensure the validity and reliability of the research. Professional Word Web and the University Word Web are used to teach the vocabularies. The mean scores of the pre-test in control group are 7.89 and the score of post-test is 8.59. So, there is a little rise but not very significant. However, having a look on the pre-test and post-test of the experimental groups mean score it is clear that there is a high increase with the numbers from 8.00 to 11.76. The survey questionnaire results were summarized as following by Yip, F.W.M., and Kwan (2006) :

> Over 70% of the respondents stated that playing the online games in the two web sites was enjoyable (Part 2, question 1). More than half of them claimed that a wide variety of games were provided (Part 2, question 3) and about 3 quarters of them commented that the level of difficulty of the games was just right (Part 2, question 4). The majority of them found the instructions and game rules easy to follow (Part 2, question 6). More than 70% of the respondents regarded the games as effective in helping their vocabulary building (Part 2, question 9).

With the results of the mean scores and the questionnaire, it is clearly proved that online games are effective on learning vocabulary in this research. The authors also mention that the students are the favour of learning with online games instead of face-to-face learning. Another issue is that online games motivate students on learning vocabulary.

The last article is written by Jalali, S., Dousti, M. in Iran with the title: "Vocabulary and Grammar Gain Through Computer Educational Games." While we are living in a world surrounded by computers it is undeniable to investigate its advantages in EFL classes. This article makes a research on 58 female students with the Elementary level on their vocabulary and grammar learning process through online games. Since this literature review is about vocabulary learning through online games, it will only focus on the first part of the research which contains vocabulary and skip the part of grammar. For the research the Multi-Rom of Oxford University Press is used. The students were divided into control- and experimental groups. The outcome of pre- and –post-test was given in the result as: "The results of the pre- and post-tests in both groups were statistically compared using the independent samples t-test with the SPSS statistical software version 17. Significance was set at $p < 0.05$."(Jalali, S., Dousti, M.) As to see from the result there is no significant difference between rote learning of vocabulary and learning through computer games.

2.3.2. Research Question 2

The second part of the methodology focuses to find an answer to the question whether it makes a difference in learning vocabulary through online games for different genders. It is likely to say that males and females have their own strengths. Among people it is accepted that men can drive better and that women can cook better.

For the research only three of the selected articles will be analysed, while the others did not mention the gender. The first article was written by Nahid Shariarpour and Zahra Kafi with the title:" On the Effect of Playing Digital Games on Iranian Intermediate EFL Learners' Motivation toward Learning English Vocabularies". In this investigation 25 male students took part. So, it was a homogenous group. The result of this paper shows that learning vocabulary games through online games are an effective way. The second research which is written by Yip, F.W.M., and Kwan (2006) shows similar results. They have used heterogeneous groups, however the numbers of boys are obvious much more than the female students. In this research 87 male and 13 female students took part. Also they proved the effectiveness on online games on vocabulary retention. However, when we look at the last research to analyse the results are total opposite. The research is written by Jalali, S., Dousti, M. as mentioned above. They have used only 58 female students and the outcome is that there is no significant difference between rote learning of vocabulary and learning with the help of online games. Taking those three researches into account it can be clarified that genders effect vocabulary learning through online games, even though that Yip, F.W.M., and Kwan (2006) argue that the outcome is not influenced by the different genders, but in the big picture it can be clearly seen that genders do effect.

2.4. Discussion and Conclusion

Given what is found in the literature research it must be mentioned that the numbers of the students are less to prove the outcoming statement. Another issue is that the most of the researches are qualitative and only based on empiric results. It is better to prove the results by quantitative numbers and it is even better to use both quantitative and qualitative results, as in the research of Yip, F.W.M., and Kwan. So, for the future more investigations have to be made on online games and its educational advantages or disadvantages. The numbers of students have to be more, as these researches are accepted to

have international results. In addition, more researches can be made on the difference of male and female learners in account of online games.

To conclude the literature review on the impact of online games on vocabulary learning, it can be said that online games are an effective and motivating way to teach vocabulary in EFL classes. However, the gender factor has an influence to the learning process with online games. Male students showed more success in learning vocabulary through online games rather than female students.

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