Full Length Research Paper

Effect of using electronic games in developing problems solving skills in English language class of the sixth grade students in Jordan

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The Study aimed to identify the effect of using electronic games in developing problems solving skills in English language class of sixth grade students in Jordan. Study sample consisted of two branches of the sixth basic grade students in Al-Ahnaf be Qais School, (30) students for each group, they were randomly selected to form the experimental and the control group. To measure the extent of students acquisition of problems solving skills the researcher performed the following: Developing a test consisted by a number of life situations measuring the students ability to solve the problems through acquiring them by the electronic games by referring to the previous literature and benefiting from the related previous studies that addressed the topic teaching by the electronic gamed in developing the problems solving skills, the test consisted of (10) items and five life situations, they were built based on the related previous studies to the study topic. It was cleared from the result that the correlation coefficients for the test's clauses ranged between (0.49-0.847). Also, the study extracted the difficulty coefficient of the test clauses, the difficulty coefficients for the test clauses ranged between (0.58-073) indicated acceptance of difficulty degrees for the study purpose. The study showed that there is a significant difference in the means of the post scores of the experimental students and the students in the control group. It was concluded that students in Jordan benefited from applications of the program in developing problems solving skills in English language class, which shows the importance of using this method in teaching. In the light of the study result, it was recommended that topic related to the electronic educational games and their educational applications should be included into the content of teaching methods to specific educational stages in Jordan.

Key words: Electronic games, English language, problems solving skills, sixth grade students

INTRODUCTION

Knowledge and technology have greatly developed in our present time, and it is expected to continue in the next decades.

It is possible to monitor the aspects of this development and formation in the following points :
The appearance of the computers and the communication chains, and the flow of information through the internet and the satalife stations.

Also, there are different and developed modes and types to use the computer as a learning teaching means, including game program.(Garcells, Gonzdez, Lie, Eosbel, 2013).

These programmes explain the scientific concepts in an interesting and any way, preferable to the self, like the game programmes for the children. As we know, the use of these techniques does not appear at one level, because of their diversified levels in which each level has

specific effect in the learning process. (Olson, Olson, 2015).

In this regard, (Golman) pointed that one of the simplest forms of the techniques, the oldest and more spreading is the games technique that has great role in the scholastic curriculum, since it achieves different educational goals, that is why it is considered as a complementary strategy, (Johnson, 2014). as a result may modern educational institutions pay great importance to the games in their curriculum and seek to provide the necessary means because of it is importance as one of the basic things in the individual life, it is difficult to separate it from work, and the modern methods in teaching seek to bring closely the work to play which considers a significant means for inquiry, play whether individual or collective considers expressing the life itself, and play has great value in learning, this what Rosso and Frobel called for the necessity to use the game in the teaching learning process (Al-Jaber, Al-Khralsho and Mdanat, 2005).

Scraff considered play process all of the complete educational process characteristics it provides the focus for long period of time, and develop the initiation and imaginary, and the great interest in play has huge mental experience, and complete emotional version, there is no other activity pushes to repetition in a deep way and develop the personality in a distinguish way like play, play also calls all the impeding effort and energy.

Play is one of the most complete educational processes because it effects the child's mind, emissions and bedy (Mardan, 2004).

Computer games have developed during the past forty years from games on Floppy Disks to (CD) to the internet web, and the new forms of these goals games developed to become in three dimensional system of a caustic capabilities influencing the player during playing, these games can be played individually (player against the computer) or against other persons present on the internet web (Moursund, 20…..).

Because of the importance of problem solving, some of the educators see that problems solving should be the basic goal for teaching. Since problems solving comes at the top of the education output pyramid as seen by Janbea.

Bruno principle states that the important thing in the learn process not only the discovered results, rather the most important the processes chain leading to this results, this components agree with problems solving process, while William Broanel confirms that one of the good teaching factors is the teachers knowledge about how the students think when they face unfamiliar situations or problems (meena, 2002).

Study Problem and Questions

Some studies mentioned that the electronic games addicts might suffer from increasing nervous, anxiety, in addition to social isolation and other issues (Diego, Sanders, Kaplan, 2000).

It was noted through his work that traditional methods used in teaching the basic education students generally unable to provide the students with the needed skills to face the life with the different situations and environments, so this study sought to examine the effect of using the electronic games in developing problem solving skill in the English class of the sixth grade students in Jordan.

So, this study seeks to answer the following questions :

- What is the effect of using the electronic games in Developing the problem solving skill in English class of the sixth grade students in Jordan ?

Study Importance

Study importance stems from the theoretical side from the information importance relating to the electronic games and problem solving skill that will be obtained from its primary and secondary sources.

Also, the importance of the study appears from the information importance which plays important and increasing role in the human life from different domains, and the active contributing process in the educational decision making and developing the qualified human resources for the knowledge economy society come from the researches and studies based on the educational needs, and employing the outputs of these researches in activating the educational process, and benefiting from it according to the educational system's components.

Also, this study gains its importance through the following:

- Its contribution to the development of using the electronic games by the sixth grade students with the hope to provide the students of this stage with skills able to contribute to problems solving encountering them in English Language class.

- Agreement with the educational development plan aiming at improving and developing the curriculum and supporting the efforts of Directorate of curriculum, and introducing the suggestions and recommendations at time its curriculum remained in the experiment phase.

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Study limitation

- This study was limited to the sixth grade students in Amman Directorate of Education.

- This study is limited to the use of instruments to measure the teaching skills.

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Procedures Definitions

- Teaching by using the electronic games : one from of the learning forms based on a set of planned steps and procedures performed by the learner on the computer, through compliance to specific rules to achieve specific educational goal in a competitive and interesting

frame, which is a kind of learning centered around the learner and allows him the freedom to explore and effectively experiment inside the educational environment, and expressed by the degree to which the respondent achieves according to the instrument.

- The researcher identity's it as : An organized activity consists of   a number of electronic games go within specific rules in which the players interact with the computer and the students exert individual or group efforts with the goal to develop problem solving skill.

The Normal Method

It is the traditional method used by the teacher in teaching English language for the sixth grade.

- Problem solving skill: A State in which the students feel they are infront of a situation, might be a question they do not know its answer, or unsure about the right question, and feel the desire to know the right answer.

Theoretical Frame

Learning by playing

Identifying the playing – it is an important behavioral activity play basic role in formulating the individual's personality and sometimes confirming the group's heritage, and it's a behavioral phenomenon in the human being's, especially the human (Faraj, 2005).

Bdair as mentioned in Al-Rebawi (2009) clarified that playing is the child's profession and function, and it is his preferred work, the showed that the playing child is an active initiator child, it is a sign of the appropriate growth.

(Hatt) in her important research at Oxford University about (exploration and playing of the children), reached valuable results in explaining the playing phenomenon, and how it takes place, and its effective influence in leading the child for search and exploration, but when the child deals with any new games, he try's to answer this question in his mind, so he asks

- What can I do with this new game ? (modern, 2004).

Importance of Playing

Playing considers the child's life method in his communications with the environments components of individuals and materials, and playing develops like other development aspects, and playing considers firstly aimless or undirected, then develops to behavioral plan can be exploited to develop and enhance the child's capabilities.

It is possible to summarize what playing develops and the activity in the child's personality in the following :

- Developing the skills that achieve communication with the others and with the game, and this engagement makes the child mastering the language.

- Playing helps in creating the interaction between the individual and the environment components.

- The child practices mental and cognitive processes during playing.

- Playing enables the child to practice important social roles once as group leader, and another time imitates a job or specific profession, acquiring social skills in dealing with the others (Batha, 2002).

- Through playing the child is able to grow his body muscles, increases his motor skills, through jumping and running, benefits from his different senses to know the things, and the sounds which makes playing fan for him.

Electronic Games

There are few studies and theoretical literature that have addressed the electronic games, although it is possible to distinguish between three perceptions from three different traditions: psychological, literature and half a familiar perceptions. (Al-reebawi, 2009).

Currently, the concept problems solving linked to learning concept itself, confirming that the real learning method is the one based on solving problems in their kinds (Morad, 2005).

Its usage in teaching is a method helping and qualifying the teacher to possess a set of skills enable him to solve any problem he might face outside of the school's walls (Shaheen & Hattab, 2004).

Because the human life includes many problems, situations and solutions, and the human seeks for life continuity and facing the situations with positive solutions lead to overcome the problems and facilitate life in front of him (Morad, 2005).

In fact, it is not only important to solve the problem at school, but the most important is that the student keeps more than one plan and more than one way to solve the problem, this is the base in the case of creative problem solving.

Because of the importance of using the electronic games in the differ fields, this study comes to show the effect of using the electronic games in developing the problems solving in English Language class for the sixth grade students in Jordan.

Educational games entered the most of the educational programs either part of the electronic dictionaries, such as the words and letters games, or assigning exercises and items for them after learning the facts, concepts and principles. These games used to test learning and making it more attractive, and training on higher levels of learning and thinking.

These games were designed for the learner to feel he is playing but by measuring the learning it was found that he learns creativity and innovation, and high levels of the educational goals.

The taking place developments in the computer and software improved the previous educational programs, making education more interesting (Al-Reebawi, 2009).

Problem Solving

Because of the importance of problems solving, many see that problems solving should be the basic goal for teaching, since problems solving comes at the top of the learning outputs pyramid, and the problem requires solution. Since it remains pressuring on the individual with the goal to reach a balance state or to get red of anxiety and stress (Qatami, 2000).

Problem Solving Steps

(Shaheen&Hatab, 2004) indicated that problems solving activity passes within the following steps :
1-   Feeling the problem
2-   Determining the problem
3-   Analyzing the problem
4-   Collecting data related to the problem
5-   Suggesting the solutions
6-   Studying the proposed solutions critically
7-   The creative solutions :
Reaching unfamiliar solutions by using innovative methodologies (Bran Storming).

Previous Studies

Al-Harbi study (2010) aimed to reveal the effectiveness of the electronic games on the direct academic achievement, the study followed the semi experimental method, study sample consisted of (36) students randomly selected from the second grade students in Sanabel Al-Madeena Al-Monawara Schools.

The researcher selected relevant electronic educational games to teach the multiplication lessons as the study instruments, and prepared the academic achievement test in the multiplication lessons and applying it after confirming its validity and stability, the duration of applying the experiment extended for ten weeks. The study reached the presence of differences with statistically significance between the means of the students scores in the experimental and control group in the post-test at remembering and understanding levels in favour of the experimental group and the presence of differences with statistically significance between the mean scores of the experimental group students and the control group students in the post achievement test. (remained learning effect) at remembering and understanding levels and the test as a whole in favor of the experimental group.

Al-Rebawi (2009) study aimed to investigate the effect of using electronic games and the different educational developed computerized programs on the achievement extent and the growth of the creative thinking of the fourth and sixth elementary grade female students in English language subject, the study used the experimental method, and the random research sample consisted of (93) female students distributed to three groups, an educational computerized program is used consisted of lessons, presentations power point and ready educational programs with the first experimental group, and for the second experimental group the educational and electronic games were used, while the third group applied the use of the normal method as   a control group.

To measure the effect of the electronic and the educational games in achievement, achievement test is prepared, and to determine the effect of using the electronic and educational games on the creative thinking components (fluency, flexibility, originality and the details) and the critical thinking : relation of the whole with the part and comparison, interview, classification and decision making.

Globally known tests were applied to measure the creative thinking, including Torrance tests for the innovative thinking.

The study reached that using the electronic games and the different educational computerized programs leads to increasing the students achievement, also reached that the use of the electronic games and the different developed educational computerized programs leads to the growth of the creative thinking of the fourth and sixth grade female students in English language course as being one of the basic things in the individual life' since it is difficult to separate it from the work.

As a result, the modern teaching methods seek to bring the work closer to play that consider excellent mean for inquiry play activity whether individual or group play considers expressing the life itself, and play has great value in learning, this what called for by many researchers about the necessity for using playing in the learning teaching process (Abu-Jaber,   Al-Khraisheh and Mdanat, 2003).

Playing helps in building the sound personality through the child's active participation in the free activities in an enjoyable and funny form, playing encourages the development of conversation and dialogue language, and supports skills before reading such as the application, and visual distinguishing, and encourages the cooperation and participation development between the children (Khatab and Arafat, 2002).

Scarff considered playing as process all of the characteristics of the complete educational process, it provides the focus for longer period, and develops the initiative and the imagination.

Play, according to Mardan (2004), is one of the most complete educational processes, because it affects on the child's mind and his emotions and body method and procedures.

METHODOLOGY

The study focused on the semi-experimental method through the use of the electronic issued in developing the problem solving skills. The study individuals were divided into two groups (experimental and control group).

Study sample consisted of two branches of the sixth basic grade students in Al-Ahnaf be Qais School, (30) students for each group, they were randomly selected to form the experimental and the control group.

The experimental group was subjected to the program that depends on the teaching method by using the electronic games to develop the problem solving skills in English language skills while the control group taught by the normal method through a number of lessons to investigate the extent of teaching method by using the electronic games or the traditional way in developing the students' problems solving skills.

Table 1 shows the distribution of the study sample individuals :

Table 1: Study sample individuals

Group	Number
Experimental group	30
Control Group	30
Total	60

Study Instruments

To measure the extent of students acquisition of problems solving skills the following was performed:
- Developing a test consisted by a number of life situations measuring the students ability to solve the problems through acquiring them by the electronic games by referring to the previous literature and benefiting from the related previous studies that addressed the topic teaching by the electronic gamed in developing the problems solving skills such study like Al-Harbi (2010) study, the test consisted of (10) items and five life situations, they were built based on the related previous studies to the study topic.

Instrument Validity

Study instrument validity is confirmed, and the clauses wording soundness were assured for their relevance to the study purpose.

And to test the instrument stability the researcher calculated the test stability coefficient through using cronback Alpha equation to extract stability coefficient or through (t-retest) method, by two weeks period separation, stability value of the measure reached (0.865), which indicates to accepted degree of stability, Table 2 shows stability coefficient for the test.

Table 2: Stability coefficient for the test

Stability Coefficient	The Measure
0.865	The Test

The following statistical methods were used :
- Means and standard deviations
- (t-test) test

RESULTS

The researcher extracted the differentiation coefficients of the test clauses, by Pearson correlation coefficient, Table 3 showed Pearson correlation coefficient for the test.

Table 3: Pearson correlation coefficients for the test

Question	The Degree
1	0.49
2	0.755
3	0.248
4	0.554
5	0.755
6	0.246
7	0.233
8	0.557
9	0.835
10	.847

It is clear from Table 3 that the correlation coefficients for the test's clauses ranged between (0.49-0.847).
Also, the researcher extracted the difficulty coefficient of the test clauses, and Table 4 shows the difficulty coefficients for the test clauses.

Table 4: Difficulty coefficients for the test's clauses

Question	Mean
1	0.60
2	0.73
3	0.63
4	0.63
5	0.73
6	0.63
7	0.66
8	0.63
9	0.63
10	0.58

It is cleared from Table 4 that the difficulty coefficients for the test clauses ranged between (0.58-073) which indicate to accepted difficulty degrees for the study purpose.

Results related to the study question which states:
What is the effect of using the electronic games on developing the problem solving skills in the English Language subject of the sixth grade students in Jordan? To answer this question (t-test) results were extracted for the independent sample, Table 5 shows that.

Table 5: T- test to check the effect of using the electronic gameson developing problems solving skills in Englishlanguage subject of the sixth grade studentsin Jordan

The Group	Mean	Standard Deviation	T-value	Freedom degree	Sig. Level
Experimental	18.28	5.82	2065	58	0.10%
Control	14.17	6.22			

It is clear from Table 5 the presence of difference with statistical significance in the means of the post scores of the experimental students and the students in the control group, since (t-value) reached 2.65 the difference was in favor of the experimental group students, their mean reached (18.28) while for the control group students reached (14.17).

It is possible to explain that through the benefits the control group students have gained by being exposed to the training program based on teaching by using the electronic educational games in improving their problems solving skills since they were exposed through the program to many life problems they encounter during learning in the English language subject, also the students in the experimental group have benefited from the computerized training program's different influences through the sound and picture influences also the way of displaying the issues addressed which provided them with the ability to solve these issues by themselves everyone according to his speed, this is in contract with the control group which tough by the traditional way based on dictation in which the leaner is receptor without the ability to participate in problem solving against the modern way based on teaching by the electronic educational games in which the student is the axis of the educational process and the teacher's role is to direct and advice, that is why the means indicated at the presence of differences with statistically significance in the means of the post-scores of the experimental group compared to the control group students, this indicates at the extent of the effectiveness of a training program based on teaching by the electronic educational games for the sixth grade students.

This result agrees with Al-Reebawi (2009) results that using the electronic games and the different educational computerized programs leads to increases in the students achievement, also the study reached that using the electronic games and the different and advanced educational computerized programs leads to the fourth and sixth grade students creative thinking growth in English language subject.

CONCLUSION

After completing the analytical process and extracting the results, it appear that there is an effect of using electronic games in developing problems
   Solving skills in English language class of the sixth grade.
Students in Jordan benefits from applications of the program in developing problems solving skills in English language class, which shows the importance of using this method in teaching.

RECOMMENDATIONS

In light of the study results, it was recommended that:
1-   Activating the teaching method by using the electronic educational games in teaching English Language curriculum and other curriculum for all stages.
2-   Topic related to the electronic educational games and their educational applications should be included into the content of teaching methods to specific educational stages in Jordan.

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Achievement Test

Dear Student
The teacher is conducting a research entitle: "Effect of using the electronic games in developing the problem solving skills in English language subject of the sixth basic students in Jordan"
The researcher aims to conduct a test to get acquainted with the extent to which the students understand the introduced material and its ability to develop problem solving skill

Researcher

Yaser Al - Odwan

<div align="center">

Test Clauses

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Dear Student

Read the following text then answer the question that follow
While Amer walking in the forest, he found some people burning the wood, and tree branches, they were careful, five brook up in the forest, Amercalled the civil defense to tell them about what happened in the forest (   ).

1- The relevant title for the above text is			
a- Courage	b-Delicious Meal	c- Beautiful Forest	
2- Amer was Walking			
a- Down the Street	b- Near the railway station	c- in the Forest	
3- The Fire brook down in the forest because			
a- severe winds	b- The trees	c- neglect of people	
4- the relevant punctuation sign in the forest ( ) is			
a- comma	b-Dot	c-Question Mark	
5- one of the following words form a verb			
a-Amer	b- The Forest	c- Found	

Read the following text then answer the question:
We are now in this month (   ) in which the Quran descended, in this month we visit the relatives, especially the females, and checking the poor's and the needy , at the end of this month we give zakat.

1- what is the name of this month
a- Sa'ban   b- Ramadan   c- Rajab
2- what has the God descended in Ramadan Month
a- The angels   b- the Holy Quran   c- Faith
3- the relevant punctuation sign in the text (   ) is:
a- comma   b- Dot   c- Dash
4-in Ramadan month we should care about
a- the friends   b- the meals   c- the poor's
5- one of the following words is adjective
a- Month   b- The Quran   c- Poor

Problem Solving Question through life situation

Following are some of the life situations which aim to develop problem solving skills, please read them carefully and mention your position to solve that problem.

1- If you was walking one day in one of the parks, and you saw a fire in the park, you looked to the right and to the left you did not find anyone, and you didn't find water to put the fire off, ideas became to the revolve in your imagination about the best way to put off the fire, what can you do to solve this problem.

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2- At the end of this month, you went with your family to the market to buy the EIAD clothes , when you reached the market, you found many of the trading shops selling the clothes and shoes, you searched for beautiful clothes to wear in the Eiad , when you found what you searched for, your father discovered that his money is stolen, what can you do to help your father to solve this problem

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3- The Eid came with its pleasure , you was very happy, the friend, relatives, and neighbors came to congratulate you in al Eid Occasion, you was so happy because you received a good sum of money from the relatives, you went to the toys shop to buy a toy relative to your age, what will you do to select a relevant toy from this shop.

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4- While you was going morning to school with your father in his car, one of the driver was driving fast, his car inclined from the street and hit the traffic light, which caused traffic problems in the street, there was no policeman there to organize the traffic, what will you do to solve this problem?

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5- Ahmad was blind in your classroom in which you study one day morning you went to school, Ahmad was waiting in front of his house lonely, I asked about the reason why he was standing in front of his house, I cannot find anyone to help me to go to school because my father left early to his work, what will you do to help Ahmad to go to school?

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