The Effect of Computerized Instructional Program in the Intermediate First Grade Students Achievement in Arabic language Grammar in Iraq

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Abstract
The aim of this study was to find out the amount of influence of a Computerized Instructional Program on the achievement for intermediate first grad students in the Arabic language grammar in Iraq. The study focused on students from the first intermediate grade, in the education directorate in the Diqar governorate in Iraq. While the study sample was intentional, that was selected by the researcher from the governorate's schools that have computers and relevant Instructional means for education. This was represented in four branches in two groups, experimental and control group (60) male and female students in the experimental group and (60) male and female students in the control group. The researcher has utilized the Computerized Instructional Program as he study instrument for the experimental group, while the control group utilized the educational program in the usual way. The achievement test to the two groups, the experimental and the control groups, and the study reached the following results. There are no differences, with statistical significance at significance level $(0.5 \geq \alpha)$, between the group's grades average achievement in the Arabic language grammar subject. These two groups are the experimental group students who were taught by using (the Computerized Program) and students of the control group who were taught by the using the (normal) way in education. There are no differences with statistically significance at significance level $(0.5 \geq \alpha)$ between the grades mean of the experimental group students who were taught by using (the computerized program) and the grades mean of the control group students who were taught by the (normal) way attribute to the gender variable (males, females).
Keywords: effectiveness, computerized instructional program, achievement, arabic language, and grammar.

1. Introduction

The native language, for a nation, is the greatest elements of the culture. Arabic language is a powerful life communication tool. It expanded its vocabulary by adapting many words from Persian, Hindi, Greek and other languages. The Arabic language as broad language has its own system.   It consists of audio units, words, sentences, and compositions. It is considered as a language of derivation, in fact when we analyze the language; we find it is more of a system or even as a "System of Systems". It includes voice, linguistic construction, and meanings systems (Madkour , 2002). The Arabic language facing many challenges as a teaching language, and some of these challenges are due: to curriculum design and constructions, to the teaching methods, or to the shortage of teaching aids. These facts will enforce the requirement to review the whole educational process. Arabic language is a connected unit, in a way it has been divided into few branches like reading, and dictation, and exchange, and grammar. An expression is artificially split in order to facilitate language education and to facilitate the study in-depth by issues and skills (Tueni, 2002). The importance of the grammatical rules comes from the importance of the Arabic language itself. It cannot be neither read in suitable sound that is free of errors, nor written in correct way without a good knowledge of the basic grammar rules of the Arabic language. It is the shield that protects against the tongue error and avoids slipping. Grammar cants be taught as a goal by itself independent of the other aspect of the language, but it is a method to adjust writing and sound of the language (Madkour , 2005). The weakness of students in grammar in all academic levels urges educators to study the reality of this issue and its causes, and try to find a ways to improve student's level in educational fields, in line with the overall educational goals. The outcome of the language development from childhood until university age shows a weakness in the Arabic language subject (Dulaimi, 2007). Psychologists believe that the use of computer in education setting is successful and ideal method for education. It is considered as a flexible way to meet the requirements of individualized instruction, it can provide a series of exercises, reviewing of new knowledge and concepts, feedback for students, and grading method.   Computer in education it give an immediate correct responses for students request to enhance the learning process. For example, it measure students level in language progress, and to give them additional learning activities to be an extension of past activities until the student able to reach the required level (Iskandar and and Ghazzawi, 1995).

2. Related work

Almashaqbeh and Al-dewary (2014) conducted a study to find the impact of the use of mathematical computerized games, for first grade primary students, on their achievements. The study was applied to the first

grade students in a private school in the city of Irbid. The participants of the study were (50) students, they were divided into two groups of 25 students each. Experimental group were utilized computerized math games and control group who were taught the usual way. The results of the study showed that the use of mathematic computerized games as new concepts to study math has a positive impact on student's achievement. It showed a clear progress on experimental group student's achievements due to the use of computerized program in the teaching and learning math.

Sharma and Pratibha (2013) conducted a study that aimed to investigate the role of the interactive multimedia to promote student's achievement and retention. Also, the study focused on the role of the multimedia and traditional methods to direct language teaching in the way that will affect student's achievement and retention. Participants applied the interactive method to improve their language through personal computer, laptops, and other media. The study sample was (154) students from the seventh grade, and they were divided into two groups, the experimental group (studied through an interactive multimedia), and the control group (studied through a normal way for language teaching). The results of the study come to outweigh the experimental group that used multimedia to the control group that used the normal way of teaching.

Ifeoma and Olibie (2010) conducted a study aimed to find out the impact of computer-assisted language learning to improve student achievement in English Language in the global basic education. It is main goal was to determine if the computer-aided language learning will improve the students' English achievement compared with the traditional method of English language Education. This study used a quasi-experimental research method, it involved students of secondary schools and, they divide into two experimental and control group. The study lasted for eight weeks. The results showed that computer-assisted language learning has had a positive impact on student achievement in English Language compared with the traditional way to teach grammar. It recommended that in order to encourage language teachers, they should use computers in their classrooms activities.

Dar Saleh (2010) conducted a study aimed to identify the effect of using the computerized lessons to learn Arabic language on first-grade student's achievements in Nablus city. The study methodology adopted quasi-experimental research method, and the sample of the study consisted of (313) students. The tool for the study relied on one test that measures a student's mentality levels according to Bloom's Taxonomy of knowledge. The results of the study showed no statistical significant differences between the experimental and control groups attributed to the differences in the type of group and sex. It also revealed that there was a statistical significant difference between the experimental group and control group attributed to the experimental group.

kim & gilman (2008) conducted a study that investigated the use of multimedia components such as visual and spoken text in a self-learning program to improve students English vocabulary skills, at one Middle School in Seoul, South Korea. The participants were 172 middle school students. Each student was required to complete the test instruments such as a pre-test, post-test, retention test, and attitude inventory. The result of the study showed that students learned better when they study English through "visual text and added graphics" or "visual text, added spoken text, and added graphics" instruction, some multimedia components. The results indicated that the use of graphics that was designed by computer applications to illustrate what the vocabulary means was an effective way to improve learning of English.

Dweady (2003) conducted a study to examine the impact of applying computer games on first grade student's creative thinking skills, and achievement in their reading and writing skills. The research sample was (59) students, they were distributed into three groups: the experimental group (use of computer educational games), the experimental group (use a tutorial computer and computer games), and the control group (studied in the usual way). The results of the study showed that there were no statistical significant differences in the student's achievement between the three groups. On the other side, there were differences between the three groups in the improvements of the creative thinking skills in favor of the experimental group, who used the educational computer games.

3. The Importance of the Study

The importance of the study lies in the obvious weakness in the level of student achievement in Arabic language grammar, and because of this phenomenon has become one of the most complex problems facing educators in the field of teaching Arabic language skills. This due to the poor link between the contents of the textbook and the student's needs affiliations and beliefs. Unfortunately, this will direct students to move away from focusing on grammar as an important part of the language learning process to the old concept of the curriculum that focused on memorization the new information or concepts of the grammar. The problem we have is not in the Arabic language itself, but in the techniques and methods that were used in teaching grammar as a main part of any language.

The researchers believe that the use of computer applications, to teach grammar, should move students away from complexity compared to the usual way of teaching that made them depend on the transfer of information from the teacher to students, and this encourage them to be passive recipients of information.

Modern technology move student be in the center of the educational process and the teacher role as a guidance and director of the process. From the researcher's experiences, the importance of the study comes from the clear weaknesses in achievement among students in Arabic language grammar. To address this issue, a computerized educational program was designed for teaching the Arabic language grammar. The study was carried out to detect its effectiveness on student's achievement in Arabic grammar development.

The aimed of the study was to answer the research question:

.1   Are there a significant differences at the level of ($α = 0.5$) in the collection of the intermediate first grade students achievement in the Arabic language grammars due to the teaching method (computerized tutorial, normal) ?

2.   Are there any statistically significant differences at the level of significance ($α = 0.05$) in the collection of the intermediate first grade students achievement in the Arabic language grammars due to the interaction between gender and teaching method (educational program computerized, normal)?

4. Method

This study is an experimental research design taken from pre and post test group model. This is a two group design, where one group is exposed to a treatment and the results are tested while a control group is not exposed to the treatment and similarly tested in order to compare the effects of treatment (Campbell and Stanley, 1963).

4.1 Sample

The participants of the study were (120), the intermediate first grade students, who were chosen from one high school that is located in Diqar governorate in Iraq. They were divided into four groups of thirty students each: the boys' experimental group who use the computerized program to study grammar, the girls' experimental group who used the computerized program to study grammar, the boys control group who used the usual way of studying grammar, and   the girls control group who used the usual way of studying grammar.

4.2 Instrumentation

To achieve the aims of the study, the researcher design Computerized Grammar Program and an achievement test:

4.2.1 Computerized Grammar Program

A computerized grammar program for one unit from the seventh grade Arabic grammar textbook was designed using computers applications. It includes a set of general and specific unit objectives, new concepts, activities, educational games, and evaluation. The program consists of sequential steps from easy to difficult and immediate feedback. During the design process it took into account the different levels of students and their abilities and preferences. Most of the activities were set to meet the behavioral objectives of the program.

To measure the validity of the program, it has been verified by a group of experts on the subject of the study from the Jordanian and Iraqi university professors and a group of supervisors and teachers in Jordan and Iraq. The researcher took into consideration their comments and modified some of the objectives and activities as required.

4.2.2 The Achievement Test

The researchers prepared an achievement test for the seventh grade students to measure their achievement in Arabic language grammar. The test consisted of (20) items of multiple choices with four alternatives. To measure the validity of the achievement test the researchers presented the initial draft of the test, that consisted of (23) items, to a group of professors, from different universities, and specialists. They were asked to give their comments about the test, in terms of the appropriateness of the test content for students. Also, to fill the checklist questions that was provided to give their opinion on   test: represented by the skills, and the suitability of the test time, and the accuracy of the language, clarity of instructions, and comments on how to improve the test. After their responses were collected, the researchers conducted the appropriate adjustments in the light of the observations of the arbitrators who suggested some amendments in paragraphs test to become on its final form consisting of (20) questions.

To ensure the reliability of the achievement test, it has been verify by performing the test and re-test method. A group of the intermediate first grade students were chosen randomly after that the test was applied. After two weeks, the test was re-applied on the same group. Using the Pearson correlation coefficient between the estimates grades on both occasions, it was (0.86). Stable coefficient was calculated in a manner internal consistency by Cooder Richardson- 20, it reached (0.81) and this was considered appropriate values for the purposes of this study.

4.3 Treatment

The researchers check on different methodology of scientific research and felt that the quasi-experimental method was the most appropriate approach to achieve the objectives of this study. This approach required

having two groups (control and experimental group). It also, determined the independent variable and the dependent variables. The aim of this study was to measure the impact the independent variable was the teaching method (computerized tutorial, the usual way) and the dependent variable (collection) in the Arabic language grammar.

In order to answer the questions of the study and after the selection the participants of the study and design the appropriate study tools, the researcher did the following actions: 1) the educational material was selected from the Arabic grammar textbook for the intermediate first grade student in Iraq, for the academic year (2014/2015), 2) the content of educational material was analyzed and the behavioral goals were set in measurable way according to the first three levels of Bloom's Taxonomy, 3) a computerized educational program was designed. It was presented to a group of specialist for evaluation, and after that the necessary adjustments were made, 4) an achievement test was prepared. It was presented to a group of experts to measure the validity of the test. Their comments were taken into consideration   , 5) a pre-test was conducted for the participants of the study (four groups), in order to verify the level of students in all groups, 6) start teaching process for the chosen subject of the study for (experimental groups and control groups) for period of six weeks, 7) a post-test was administered after the completion of the experiment period., and 8) a suitable analytical procedure was used to answer the research questions.

5. Result and Discussion

This study was aimed to identify the effectiveness of a computerized educational program in the collection of Arabic language grammar for the intermediate first grade students in Iraq. To answer the study questions, an appropriate statistical analyzes were conducted.

The First Research Question:

 "Are there any significant differences at the level of ($\alpha = 0.5$) in the collection of the intermediate first grade students achievement in the Arabic language grammar due to the teaching method (computerized educational program, normal)?" To answer this question, averages, standard deviations and the adjusted averages was extracted according to teaching method variable (computerized educational program, normal way of teaching which illustrated in table (1).

Table (1)

Averages, standard deviations and averages adjusted for the collection of the seventh grade students in their Arabic language grammar depending on the method of teaching

Group	N	Adjusted Averages	Std. Dev	Mean
EX-GROUP	60	13.65	1.926	14.13
CONTROL-GROUP	60	10.48	1.698	10.88
	120	12.51	2.436	12.51

Table (1) shows a variation ostensibly in the averages, standard deviations and adjusted averages for the collection of the average for the intermediate first grade students in Arabic language grammar; because of the different variable categories (computerized, normal teaching method). To indicate the significant statistical differences between the averages the Associated Analysis of Variance was calculated, as shown in the table (2).

Table 2:   The ANCOVA Summary (Group vs. Achievement)

Source	Sum of squares	df	Means square	F	P
Pre-test	43.370	1	43.370	14.676	0.000
Method of instruction	300.406	1	300.406	101.657	0.000
Error	345.746	117	2.955		
Total	705.992	119			

As showed in table (2) there were statistical significant differences ($\alpha = 0.05$) due to the impact of the teaching method as the value of "P" (101.657), and a statistical significant difference was (0.000), and the differences were in favor of the experimental method.

Researchers attributed this difference in averages between the experimental and control groups to the following reasons:

-        The well-organized of the lessons presentation in the computerized educational program. During the course period students who used the program have shown positive reactions such as issuing different voices and movements, and this indicated the extent of their integration and their interaction with the program.

-        The computerized educational program improves student's participation and the quality of education. It helps solve problems such as: overcrowded classrooms and the shortage of qualified teachers and specialists. It also, motivates students for learning and practicing new concepts. In addition, using computer applications is a new creative way to learn the grammar of the Arabic language, instead of using the regular way of teaching which prevailing the school away from the regular routine.

After the review of the literature and previous studies that related to this topic, the researchers found

that the use of computers in education has a clear impact in increasing student's achievement, and the development of various skills. The results of this study that is related to this research question were agreed with the result of Almashakbh and Dowary (2014) and Al-hela and Ghoneim (2002).

The Second Research Question:

"Are there any statistically significant differences at the level of significance ($\alpha = 0.05$) in the collection of the intermediate first grade students achievement in the Arabic language grammar due to the interaction between gender and teaching method (computerized educational program, normal)?)"

To answer this research question the averages, standard deviations and adjusted averages was extracted for the collections of the intermediate the intermediate first grade students' in Arabic language grammar depending on the sex variable and way of teaching (educational program computerized, normal) variable, and as shown in Table 3.

Table (3)

Averages, standard deviations and averages adjusted for the collection of the seventh grade students in their Arabic language grammar interaction between sex and method of teaching

Method	Gender	Mean	Std. Dev	Adjusted Averages	N
Computirized Teching Method	M	13.90	1.768	13.87	30
	F	14.37	2.076	14.32	30
	Total	14.13	1.926	14.09	60
Reguler Teaching Method	M	11.23	1.654	11.27	30
	F	10.53	1.697	10.57	30
	Total	10.88	1.698	10.92	60
Total	M	12.57	2.166	12.57	60
	F	12.45	2.696	12.44	60
	Total	12.51	2.436	12.51	120

Table (3) shows a variation ostensibly in the averages, standard deviations and adjusted averages for the collection of the average for first-grade students in Arabic language grammar; because of the different variable categories gender and method of teaching (computerized, normal). To indicate the significant statistical differences between the averages the Associated Analysis of Variance was calculated, as shown in the table (4).

Table 4   The ANCOVA Summary (Group vs. Achievement) for the interaction between gender and method of teaching variables

Source	Sum of squares	df	Means square	F	P
Pre-test	43.063	1	43.063	14.764	0.000
Method of instruction	300.458	1	300.458	103.008	0.000
Gender	.491	1	.491	.168	.682
Method X Gender	9.819	1	9.819	3.366	.069
Error	335.437	115	2.917		
Total	705.992	119			

It can be observed from the table (4) that there were no statistically significant differences ($\alpha = 0.05$) due to the impact of the interaction between the teaching method and gender as the value of "P" was (3.366) and a statistically significant difference was (0.069). This result agreed with the result of Soman study (2006), which showed that there was no statistically significant due to the impact of the interaction between the teaching method and gender in student's achievements in conversation and writing skills.

The researcher attributed this result for the following reasons:

- The experimental group students both male and female were subjected to the computerized educational program in the same conditions, while the control group (male and female) was exposed to the usual way, in the sense that they went through the same educational experiences.
- Male and female students have the same background and computer skill in the use of computer applications. Also, the computerized educational program was free of complexity and has a set of guidelines and instructions, which simplified the process of dealing with the program.

6. Conclusion and Recommendation

The purpose of this study was to find out the amount of influence of a Computerized Instructional Program on the achievement for intermediate first grad students in the Arabic language grammar in Iraq. A pre-test was conducted to collect the data at the beginning of the experiment period to test the equivalents of the control and experimental groups. A post –test was conducted at the end of the experiment period to test the effect of the treatment on student achievements. The results of the study were:

1) There were statistical significant differences ($\alpha = 0.05$) due to the impact of the teaching method as the value of "P" (101.657), and a statistical significant difference was (0.000), and the differences were in

favor of the experimental method.

2) There were no statistically significant differences ($\alpha = 0.05$) due to the impact of the interaction between the teaching method and gender as the value of "P" was (3.366) and a statistically significant difference was (0.069).

In light of the results of the current study, the researchers recommended the education stockholders to work on the training of teachers on new methods of teaching, such as the use of computerized educational software that help increasing student's motivation toward education. It also recommended providing teachers with computer lab with special applications and devices for teaching and learning Arabic language grammar.

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