

Effectiveness of Applying Inquiry Strategy on the Achievement of Ninth Grade Students in Arabic Language Grammars in Petra: Jordan

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Abstract

The aim of the present study is to explore the effectiveness of using the inquiry strategy in the achievement of ninth grade students in Arabic grammar. The study sample consisted of (120) regular students from ninth grade in the Directorate of Education for the District of Petra, of whom (60) male students from the school (Wadi Musa primary school), and (60) female students from (Asma bint Abi Bakr Secondary mixed school). They were chosen randomly and divided into two groups, the first group (experimental) applied inquiry strategy while the other was control, taught by the traditional way. Thus, the number of groups is (4) groups, the first males group, experimental (30) students, and the second group, males control (30) students, and the third females, experimental (30) students, and the fourth females, control and number (30) Student. The results showed that there were statistically significant differences due to the teaching method and in favor of t experimental group. This means that the inquiry method results were higher than the traditional way of Arabic grammar teaching. The results also showed that there is a statistically significance for gender and in favor of female compared to male students. The results did not show statistically significant differences in the interaction between the variables of gender and the teaching method.

Key words: education, inquiry, learning strategy, human sciences, stimulate learner thinking, Arabic grammar.

INTRODUCTION

There is no doubt that educational process is witnessing a growing development of effective learning among students. Education Modern scholars as "Piaget" have agreed that the most important tasks to achieve educational development is to compromise between the course curriculum in it wide meaning and the level of cognitive structure development of learners, as learners form the basis of the educational process according to Piaget . Education will become easier if the learner can classify concepts using inquiry to support his/ her opinion. Inquiry strategy is considered an organized classification for the educational material concepts (Saada, Ibrahim 2001).

Ozbil has been influenced by the cognitive development theory which was discussed by "Piaget" and said that cognitive development passes through two integrated processes:

- 1 - Assimilation: where external expertise is adjusted in accordance with the internal knowledge of the learner.
- 2 – Compatibility: where the learner's knowledge is developed according to external experiences, bringing the learner to a state of balance that enables cognitive development to move from stage to the next stage. Also the real learning is the change in the cognitive construction (Al-Ghoul, 2003, Mansi, 1997).

Ozbil believes that learning makes sense when it gives instruction in the classroom including introducing knowledge or new information which links what has been learnt with the learner's requirements. Ozbil has also provided conditions for the curriculum offered to learners including: to be well organized, to fit with the ages provided for and the ideas and concepts should be meaningful. Also the content has to include logical mental rules or organized information. New information must be integrated into learned material in order to make learning

Easier and more effective (Qatami and Qatami, 1998). Since the Arabic language lacks modern methods that Focus on students as the centre of the educational

process, this could explain students weakness in learning and understanding Arabic language structures taken into consideration that the majority of teachers focus on traditional teaching methods (Hashemi, 1982).

(Ahmad 1983) mentions many reasons for the rise of complaint of student's weakness in Arabic language structures. The most important teaching method used by many teachers is based on memorizing without understanding. In this respect, choosing the appropriate teaching method to the subject of the lesson in addition to the flexibility in the way of teaching are very necessary. For example, teacher can start with problems solving method, and then move on to another method such as discussion.

Ababneh (2003) has also discussed the most prominent problems of Arabic language learning such as: the increasing complaint of the difficult Arabic grammar. Therefore, modern trends call for simplifying and facilitating Arabic grammar in order to be instilled in student mind through taking the school curriculum and

modern teaching methods into account.

Arabic language is an active component of the unity and culture of the Arabic and Islamic nation. Language gives people the humanity features and it is a means of expressing ideas and emotions. It also facilitates human community issues in one environment in a way that offers mutual understanding. Arabic language is considered rich and is characterized with abundance, many derivations, abstraction and syntax. Moreover, its concepts can be horizontally and vertically classified which in turn helps to regulate the educational material as vague concepts in Arabic language will not be clear unless they are classified. (Younis et al 1982, Saeeda 1995). particularly in Jordan, several conferences and seminars were held aiming to facilitate and simplify Arabic language structures and develop them such as the First National Conference for Educational Development (1987) in Amman , the recommendations of the conferences of the Arabic Language Academy for the years (1987, 1989, 1990.1992), the Regional Seminar on the Development of Education in Amman in (2000). Hence, our research entitled as (the effective use of strategic inquiry on the achievement of ninth grade students in Arabic language grammar) will focus on finding out the solutions which point the defect in the educational process concerning Arabic language structures. If the inquiry method is a clear rule of Arabic grammar learning, it will obviously illustrate the importance of this study, noting that many modern methods of teaching are interested in building a sound conceptual construction. This study seeks to identify the impact of this teaching method in Arabic language grammar for the ninth grade in primary schools in the Directorate of Education in District of Petra.

Learning process is no longer easy, especially after the knowledge revolution. Consequently, learning process requires planning and preparing because the primary goal of learning is no longer to increase student's amount of information, but to give them the opportunity to discover and infer information.

According to Piaget, education is an active process carried out by the individual by interacting with the environment, thus in order to create own knowledge.

It is noted that large number of studies have focused on the cognitive learning processes based on meaningful learning in education field. (Saunders, 1992) and to inquiry most effective methods in teaching human sciences and stimulate learner thinking. Studies have contributed in providing perceptions on how students can acquire and understand concepts (Yeager, 1991) and the development of mental skills. (Wheatley, 1991, Novak, 1988) inside and outside the school.

The content is an element of the curriculum which aims to help the learner to achieve the goals through activities and teaching strategies including inquiry strategy (Ghoul, 2009)

Inquiry is identified as: search for knowledge, information and facts by asking questions. People practice inquiry naturally from birth until death as one of the life strategies that encourage high levels of thinking (2007). The aim of this model is to train the learner to question, and to deal with him as a young researcher. It is assumed that the individual tends naturally to explore and investigate. (Zaitoun, 2003).

There are assumptions underlying the inquiry model, and the most notable is to consider the child as a young researcher. Then a lot of wonder, curiosity and exploration taking into account that knowledge here is not absolute but could be changed and developed. In addition to training learners to endure and face problems as well as deal with different situations.

The most important goal of learning and education process in the inquiry teaching strategy is to understand the information, make it meaningful and then apply it in life situations.

In the field of education, inquiry has a great importance; because it makes the learner ready to face life problems, in addition to understand the variables correctly, especially in the era of knowledge revolution.

Using inquiry strategy of teaching requires the learner to be put in a problem situation, or being asked a question which stimulates thinking; and then the student is given an adequate opportunity to explore , investigate and discover . The aim is to generate a sense of internal persuasion which promotes investigation and exploration. After that, an appropriate scientific culture must be available to enable the learner to observe, measure, experience and make conclusions (Theeb et al, 2006).

The steps of inquiry are as follows:

1 - *Planning stage*: where the title of the inquiry is

Determined. Also, the importance and the questions are identified.

2 - *The process of gathering information*: in this

Stage, appropriate strategies to investigate, explore and information gathering mechanism of the subject are selected.

3 - *The stage of information processing*: the research

Is written to give explanations and answers to questions that were asked by the teacher.

4 - *The stage of results and recommendations*: the

Student's findings and conclusions of the research leading to a set of recommendations

Problem statement

Many students in different grades suffer from an obvious weakness regarding Arabic language structures, which leads to the students' sense of reluctance of Arabic grammar and syntax. This was revealed by the results of the national test in Jordan for the year 2007/2008/ ninth grade in syntax, some students attributed this weakness to several reasons including the traditional teaching methods used in the learning process (Al-Ghoul, 2009 and Titi, 2007).

Because of the importance of concepts acquisition and its impact on improving student motivation and active learning, this study concern is to exam the effectiveness of inquiry teaching strategy , and to identify the importance of this strategy in raising the level of achievement of ninth grade students in Arabic language grammar.

Aims of the study

The present study aimed to identify the effectiveness of using inquiry-based teaching strategy on the achievement of ninth grade students in Arabic grammar. It also seeks to examine the effectiveness of this strategy. Accordingly, course syllabuses for some of Arabic grammar lessons of the ninth grade have been prepared by researchers for the academic year (2007 / 2008).

Hypotheses of the study

There is no statistically significant differences at ($\alpha =0.05$) in the achievement of ninth grade students in Arabic grammar due to the method of teaching.-

There is no statistically significant differences at ($\alpha =0.05$) in the achievement of ninth grade students in Arabic grammar due to gender.

There is no statistically significant differences at ($\alpha =0.05$) in the achievement of ninth grade students in Arabic grammar attributed to interaction between the variables of gender and teaching method.

Importance of the study

The study significance is presented as follows:

1. The importance of this study arises out of the recommendations introduced by the first Conference of educational development in (1987) and the Conference of Educational Development in (1999), and a symposium to develop technological education in (2000), and project of knowledge economy development (2003). The above mentioned educational meetings have focused on directing education towards thinking skills development, through the curriculum or teaching strategies practiced by teachers in the classroom.
2. The importance of the study arises out of the importance of the concepts which are the basis of knowledge. These concepts help to develop thinking and self-learning as well as sustainable education throughout the life. Furthermore, they help to restore learning, show its impact and organize the mental experience. Thus it's easy for the learner to apply the concept in several positions after learning. Concepts are used sequentially and in an integrated manner in the construction of curricula at different academic levels (Saada and Ibrahim, 1988; Inchoate, 1985).
3. This study is carried out in response to the claims of Arabic curriculum outlines in primary education which have been calling for (following the modern methods which provide learners with various experiences to enhance their activity and seeking knowledge). It also increases students' interest in effective learning and to transfer learning effect (Ministry of Education, 1991) and inquiry is one of these methods.
- 4 - These studies deal with a new field of knowledge, as they discuss the impact of the inquiry strategy effectiveness in the teaching of Arabic grammar through increasing student achievement and organizing concepts in the knowledge and cognitive structure.
- 5 - The need for teaching methods that help facilitating Arabic grammar teaching.
- 6 - Arabic and Islamic Library lacks such studies; where

The study found no previous studies on the impact of inquiry in literature generally, and in Arabic grammar particularly. This stimulated conducting this study to achieve educational benefit in order to improve students' level of study.

Limitation of the study

1. This study is limited to ninth grade students in primary public schools in the Directorate of Education for the District of Petra in Ma'an Governorate for the academic year 2008/2007.
2. This study is limited to teaching the unit 8 of Arabic grammar book for ninth grade in the second semester. It includes the following topics: word agreement: adjectives, emphasis, coordinating conjunctions, and apposition.
3. Achievement measurement was limited to the student's achievement in the following levels: (remember and memorize, understand, apply and evaluate).

Definitions

1. Inquiry: is the process that gives the learner a large degree of independency and the ability to observe the relationships between objects in the surrounding environment and to connect them with the previous knowledge. Inquiry method is applied on unit "Words Agreement" in order to see the impact on the achievement of ninth grade students in Arabic grammar.
2. Achievement: The amount of change in the scores of ninth grade students in Arabic grammar after applying inquiry strategy of teaching.
3. The traditional way: the way used by the teacher in teaching Arabic grammar for ninth grade that depends on memorization and lecturing.
4. Ninth grade students in public schools in the Directorate of Education for the District of Petra in Ma'an Governorate / Jordan, for the academic year 2007/2008.
5. Arabic grammar: a separate book from Arabic language books and has a particular class once week. It includes grammatical and morphological topics of ninth grade in Jordan.

Previous studies

Many studies have been conducted in this aspect and some are mentioned here:

The aim of a study conducted by Abu Qamar (1996) is to determine the impact of using guided inquiry strategies in comparison with the traditional teaching method on the achievement of eighth grade students in science and their attitudes towards it. The study sample consisted of (189) male and female students enrolled in four sections of study in eighth grade. It was selected from two schools in Gaza Strip, one for males and the other for females. Students were divided randomly into two groups, the first was controlled, applying the traditional method, and the other was experimental applying the inquiry method. The study results reveal that students applying inquiry method scores were higher than students applying the traditional teaching method regarding student achievement in Scientific concepts and their attitudes towards science.

It was observed that student's interest has increased after applying inquiry learning method. Student's activeness and interaction was clear. Through the study, it was noticed that inquiry method encourages students to depend on themselves in investigation and seeking knowledge. So, the student will be the center of the learning process. The study also showed the clear impact of both high level (high and medium) benefits from the inquiry strategy.

The study of Al-Zahrani (2000) aimed to identify the effect of using the strategy of guided inquiry on academic achievement in the unit of static electricity of the second secondary grade students / governorate of Makhwah in levels of (remembering, understanding and application) of Bloom's Taxonomy of learning.

A multiple-choice questions pre test and a post test have been prepared to measure the scientific achievement for both experimental and control groups, and to measure the level of scientific achievement after using guided inquiry teaching with the experimental group while the control group is taught by the traditional way.

The study was conducted to test the relationship between teaching in a guided inquiry or the traditional way on student's scientific achievement at levels of memorization, understanding and application of Bloom's Taxonomy. The results of the study have revealed that experimental group were higher in the post test of scientific achievement at levels of remembering, understanding and application. Which enhances and emphasizes achieving the goals of teaching physics at these levels of knowledge in this unit using guided inquiry method?

Hakimi study aim (2000) was to identify the effect of using guided inquiry strategy on biological concepts achievement and retention of scientific knowledge among students of second secondary grade, scientific stream. The study sample consisted of (140) students from two schools one for males and the other for females in Aden/ Yemen. The sample was divided into two groups, the first experimental and was taught by guided inquiry method and the other was control group which was taught in the traditional way. The results indicated that the experimental group student's scores were higher than the control group in general regarding biological concepts acquisition, and in the achievement of each of the illogical concepts. In addition, Females results were similar too.

A study conducted by Attifi (2006) aimed to identify the effect of using inquiry strategy on students' achievement and retention in mathematical logic. This study particularly dealt with the unit of mathematical logic in the mathematics book of the first secondary grade (edition 2005) in the academic year 2004/2005. The sample consisted of students from first grade secondary school in the city of Dali in the Republic of Yemen. The results

Indicated that inquiry method usage in mathematical logic teaching had a positive impact on student achievement and retaining. Inquiry method had also a clear impact in stimulating students to prepare lessons previously as well as attracting their attention, Increasing their interaction and motivation to think and participate in the discussion.

Medlah also conducted a study (2008) that aimed to identify the (effect of using guided inquiry method on the achievement and conservation of scientific knowledge in chemistry. The study sample consisted of (66) students from second secondary grade - Scientific Stream who have been selected intentionally from two schools in Alsaeed Directorate, Governorate of Shabwa for the academic year 2007/2006 and in the following methods: (32)

students experimental group (second secondary students / scientific stream /Aziz secondary school) and (34) student control group (second secondary students / scientific stream/ Yashbim secondary school). One of the grades represents the control group and the other represents the experimental group students that were selected according to a lottery.

The two groups students have attended (7) classes from the seventh unit of the chemistry book second secondary students - Scientific Stream of the academic year 2007/2006. Unit title is (the speed of chemical reactions and chemical equilibrium). The results of the study include: - experimental group results were higher than the control group with statistically significant differences at level ($\alpha = 0.05$) achievement in general. The experimental group results were also higher than the control group with statistically significant differences at level ($\alpha = 0.05$), in all levels of scientific knowledge at the three levels of Bloom's Taxonomy (remembering – understanding - Application) except (Remembering and applying the principles and laws) where the differences has no statistically significant. Also the experimental group results were higher than the control group with statistically significant differences at ($\alpha = 0.05$) with respect to the overall retention of scientific knowledge.

Hillat also conducted a study (2008) aimed to explore the effect of inquiry method to acquire science processes of eighth grade students in Jordan with different learning styles and to determine which of these patterns are more affected of this method. The study sample consisted of (54) students in the eighth grade in Jordan, selected in an intentional way. Students were taught in guided inquiry method. (Honey) test has been applied to determine the patterns of learning. Also, the science test developed by Iman Ghaith (1988) which was carried out to determine the degree of student's acquisition for these operations. The results showed a statistically significant difference at ($\alpha = 0.05$) between the average of the active pattern group and the average of middle group and in favor of the middle group. Also, between the average of the active group and the average of theoretical group, and in favor of theoretical group. However, No significant differences were found between other groups.

Through a review of previous studies the following

Points were observed:

1. Inquiry method results were higher than the results of the traditional method in terms of the achievement and retention of scientific knowledge in different subjects, including mathematics, physics, chemistry, biology and science in general, noting that the samples used were selected from different classes and grades.
2. These studies were conducted in different Arab countries including Jordan, Saudi Arabia and Yemen. No modern foreign studies have been found in this field.
3. Some studies results indicated to the importance of the inquiry method and its apparent impact in stimulating students to prepare pre-lesson. In addition, it is very important in attracting the attention of students and it increases their interaction in learning and motivates them to think and participate in the discussion. This will contribute in student self-independency in exploring and investigation, so that it has an active role in the learning process.

The method and procedures

The study population

The study population consisted of all ninth grade students, male and female primary schools in the Directorate of Education\ Petra. Number of students was (580) students, of whom (260) were males, and (320) female students.

The study sample

The study sample consisted of (120) ninth grade regular student in Directorate of Education schools at the District of Petra. (60) Male students were from (Wadi Musa primary school for males), and (60) female students from (Asma Bent Abi Baker secondary mixed school). Students were selected randomly and the sample was divided into two groups, the first was experimental and has been taught according to the inquiry method and the other group was control and has been taught in the traditional method. In this case there are (4) groups, the first is experimental/males/their number is (30) students. The second is control/males /their number is (30) students. The third is experimental/females/their number is (30). The fourth is control/females/ their number is (30) students, Table number (1) shows the study sample.

Statistical methods

To ensure fairness of the four groups before starting the experiment, analysis of covariance has been used, which

Table 1. Sample's distribution according to gender, group and number

Gender	Group	Number
Males	experimental	30
Males	Control	30
Females	experimental	30
Females	Control	30
Total	4	120

Table 2. Means and standard deviations for the performance of students in the four study groups

Gender	Group	Mean	SD (standard deviation)	Number
Male	experimental	84.56	4.68	30
Male	Control	73.16	13.67	30
	Total	78.86	11.65	60
Female	experimental	87.76	3.88	30
Female	Control	79.06	15.74	30
	Total	83.41	12.18	60
Total	experimental	86.16	4.56	60
	Control	76.11	14.92	60
	Total	81.14	12.08	120

Table 3. An analysis of covariance of pre and post test for both gender and experimental group and the interaction between them

sources of variation	Sum of squares (SS)	degrees of freedom	Mean of squares	F value	significancelevel
Covariate	194.31	1	194.31	1.65	.201
group	3053.03	1	3053.03	26.02	.000
Gender	637.63	1	637.63	5.43	.021
Gender*group	54.04	1	54.04	0.46	0.49
error value	13492.45	115	117.32		
total	807469.00	119			

Showed no statistically significant differences between the four groups on the pretest. F value.

($F=1.65$), significance level (.201) which is not statistically significant at level ($\alpha = 0.05$) as shown in Table (3). With respect to answer the study hypotheses, arithmetic means and standard deviations have been extracted, and analysis of covariance was used.

RESULTS

The present study aimed to know the effectiveness of using the inquiry strategy in the achievement of ninth grade students in Arabic grammar.

In order to recognize that, the following hypotheses were examined:

- There is no statistically significant differences at ($\alpha =0.05$) in the achievement of ninth grade students in Arabic grammar due to the method of teaching.
- There is no statistically significant differences at ($\alpha =0.05$) in the achievement of ninth grade students in Arabic grammar due to gender.
- There is no statistically significant differences at ($\alpha = 0.05$) in achievement of ninth grade students in Arabic grammar attributed to the interaction between the variables of gender and teaching method.

To examine these hypotheses, mathematical means and standard deviations for students' performance have been extracted in the four students groups.

As shown in Table (2), there are apparent differences in arithmetic means of the performance in the post test due to the difference of each of student's gender and the group. To explore whether these differences are statistically significant, the researchers used analysis of covariance.

To test the study hypotheses, analysis of covariance table has been used as shown in table (3). We will start testing the hypothesis of the first study, which provides:

- There is no statistically significant differences ($\alpha =0.05$) in the achievement of ninth grade students in Arabic grammar due to the method of teaching.

It was found that there are statistically significance for teaching method as shown in Table (3) where the value ($F = 26.02$) and the significance level (000.) and in favor of the experimental group where its arithmetic mean is (84.56), while the arithmetic mean of the control group is (73.16). This means that inquiry method is better than the traditional method in teaching Arabic Grammar

With regard to the second hypothesis which provides:

- There is no statistically significant differences ($\alpha = 0.05$) in the achievement of ninth grade students in Arabic grammar due to the gender. Table (3) has shown that there are statistically significant for gender, where the value ($P = 5.43$), significance level (0.021) in favor of female students, where the arithmetic mean of their performance is (83.41) compared to males whose performance arithmetic mean is (78.86). With regard to the third hypothesis of the study, which states?

There is no statistically significant differences at ($\alpha = 0.05$) in the achievement of ninth grade students in Arabic grammar due to the interaction between the variables of gender and method of teaching. Table (3) reveals that there is no statistically significant differences for the interaction between the variables of gender and method of teaching where the value of (F) = 0.46 and the significance level is 0.49.

DISCUSSION

The present study aimed to know the effectiveness of using the inquiry strategy in the achievement of ninth grade students in Arabic grammar. In order to recognize that, the following hypotheses were examined:

- There is no statistically significant differences at ($\alpha = 0.05$) in the achievement of ninth grade students in Arabic grammar due to the method of teaching.

- There is no statistically significant differences at ($\alpha = 0.05$) in the achievement of ninth grade students in Arabic grammar due to gender.

- There is no statistically significant differences at ($\alpha = 0.05$) in achievement of ninth grade students in Arabic Grammar attributed to the interaction between the variables of gender and teaching method.

The results of this study can be discussed by the previous studies which have shown distinction of using the inquiry strategy in the achievement of ninth grade students in Arabic grammar. This result matches with the results of studies of (Attifi, 2006) and (and Zahrani, 2000) and (Madla, 2000) and (Hillat, 2000) and (Hakimi, 2000) and (Abu Qamar, 1996), which indicated that the inquiry method results overreached the traditional method in the teaching of different subjects, including mathematical logic, static electricity, chemistry, science processes and biological concepts respectively. This Result can be explained by referring to the role of the inquiry method and its obvious impact in pushing students to prepare pre-lesson as well as its importance in attracting student's attention and increase their interaction in learning, and motivate them to think, and participate in the discussion. This operation promotes the student to pay attention for self-reliance in investing and exploring, thus becomes an active factor in the learning process

With regard to the results of the second hypothesis, which showed the higher results of females in comparison to males, no previous study has been found that compares between males and females in teaching Arabic grammar through using the inquiry method. High results of females compared to males could be explained in that females are more committed to the given instructions and more likely to show excellence than males.

With regard to the results of the third hypothesis, which showed no statistically significant differences in the achievement of ninth grade students in Arabic grammar due to the interaction between the variables of gender and method of teaching, no previous studies discussing the interaction between the variables of gender and method of teaching in Arabic grammar were found, and each of these two variables works separately from the other.

RECOMMENDATIONS

According to the study results, the researcher provides the following recommendations:

1- Using inquiry strategy in teaching Arabic grammars for ninth grade students in public schools in Jordan to reduce student's weakness in this field.

2- Provide training programs for teachers to help them use inquiry strategy effectively in the classroom in order to increase student's motivation toward learning, as well as their achievement.

3- Implication of modern teaching methods and strategies within the curriculums and teachers guides as an attempt to improve student's ability in understanding Arabic grammar, as well as to increase their positive attitudes toward this aspect.

4- Assigning a whole day to train new teachers on how to involve inquiry strategy in the classroom before they commence their work.

5- Conducting more studies dealing with inquiry

Strategy involvement in other subjects and other variables.

CONCLUSION

The present study aimed to know the effectiveness of using the inquiry strategy in the achievement of ninth Grade students in Arabic grammar. The results of the study which was conducted on sample students from ninth grade in the Directorate of Education in Petra showed that using inquiry strategy results were higher than the traditional teaching method in Arabic Grammar. This indicates the effectiveness and necessity of applying

inquiry strategy at schools. Additionally, it was found that female's achievement in Arabic grammar was higher than males; however, it was found that the interaction between variables of gender and teaching method had no effect.

REFERENCES

- Abu Q, Basem M (1996). The effect of using guided inquiry method on the achievement of eighth grade students in science and attitudes towards it, Master Theses, An-Najah National University, Nablus, Palestine.
- Ahmad MAQ (1983). *Methods of teaching Arabic language*, First edition, Maktabat Al- Nahdah Almasriah.
- Al- Hakimi, Waleed M (2000). *The impact of using guided inquiry method on the achievement and retention of the biological concepts of scientific knowledge*, Master Thesis, University of Aden, and Aden, Yemen.
- Al-Zahrani GA (2000). *Effect of using the direct inquiry method On academic achievement in physics among students in the second secondary grade in Makhwah /Saudi Arabia*, Electronic version.
[www.edu.gov.sa/papers/index.php? Action=showPapers&id=107](http://www.edu.gov.sa/papers/index.php?Action=showPapers&id=107)
- Al- Titi M (2007). *Social education and methods of teaching*, First edition, Alam Althaqafa for Publication and Distribution, Amman. Pp. 92-101.
- Ababneh J (2003). *Internal challenges facing the Arabic language in the modern era in terms of syntax, morphology and dictation*, Twenty first Cultural Season, Arabic language assembly, First edition, Amman, Jordan.
- Al- Ottifi AM(2006). *The effect of using the inquiry method in student's achievement and retention of mathematical logic themes*, Master Thesis
http://www.yemen-nic.info/db/studies/studies/detail.php?ID=12580&phrase_id=62056
- Al-Ghoul M(2009). *Arabic language curricula and methods of teaching*, Dar Al-Kitab Al-Thaqafi, Amman.
- Hillat B(2008), *The impact of the inquiry method to acquire the science processes of eighth grade students in Jordan with different learning styles and determine which of these patterns are more affected by this method*, Electronic version
<http://www.jedu-sohag.sci.eg/drbahgat2008.html>
- Hashemi AT(1982). *The practical Director of Arabic language Teacher*, Second Edition, Moassasat AL-Risalah , Beirut. Pp.41-49.
- Journal of the Arabic Language Academy of Jordan (1987). 33, the eleventh year conference.
- Journal of the Arabic Language Academy of Jordan (1990). 39, the fourteenth year conference.
- Journal of the Arabic Language Academy of Jordan, (1992). 42-43, sixteenth year conference.
- Mancie HO (1997). *Curricula and methods of teaching social studies*, First edition, Dar Al- Kendi, Irbid, Jordan. Pp. 34-36
- Madlah NS(2008). *The effect of using the inquiry method on the achievement and retention of scientific knowledge in chemistry*, Unpublished MA Thesis, College of Education, University of Aden.
- Ministry of Education (1987). First National Conference for Educational Development. Amman, Jordan.
- Ministry of Education (1991). Arabic curriculum and outlined in the stage of basic education. First Edition, Amman: Directorate of the curriculum, Electronic version
<http://www.edu.gov.sa/papers/index.php?action=showPapers&id=107>
- Ministry of Education (2000). Regional Seminar on the development of technological education at the secondary level, United Nations Educational, Scientific and Cultural Organization, Hashemite Kingdom of Jordan, The final report, Amman.
- Novak (1988). *Learning science and the Science of Learning*, studies in science Education. 2:77-101
- Qatami Y , Qatami N (1998), Models of classroom instruction, Second Edition , Dar Al- Shorouq for Publishing and Distribution, Amman, Jordan. Pp. 26- 32
- Saadeh A, Jaudt I, Abdullah M (2001), Curriculum's Organizations, planning and development, First edition, Dar Al- Shorouq, Amman, Pp . 15-22
- Said MS(1995). *Arabic language difficulty between the truth and claims*, Journal of the Arabic Language Academy of Jordan. 49 (19).
- Saunders WL, Dickinson, DH(1988) *A companion of community college students Achievement and Attitude changes in lecture-Only and Lecture Laboratory Approach to General Education Biological science courses* "J. Res. Sci.Teach. 16(1 and 7):13-17.
- Theeb Z, Al-Ajouri S, Al- Hashem J(2006). *Teacher's Guide of Arabic language grammars and linguistic applications for ninth grade*, Dar Almanahij wal Kotob Almadrasieh, Amman. Pp. 99-103
- Wheatley GH(2006). *Constructivist perspectives in science and mathematics Learning*, Science Education. 7(1) :9-21.
- Yager RE (1991). The constructivist Learning Model: *Towards Real Reform in science Education*, The science Teacher. Pp.52-57. <http://jo.intel->

ehren.de/communication/forum/viewtopic.php?f=13&t=598

Younis FM, Al-Naqah MK, MdKaur AA (1982). *Basics of teaching Arabic language and religious education*, Dar Elthaqafa, Cairo. Pp. 16-18

Zaitoun H(2003), *Teaching strategies, a contemporary Perspective of teaching and learning methods*, first edition, Alam Alkotob ,Cairo. Pp. 90-95

Zaitoun AM (1984). *Experimental study of the impact of the inquiry method on the achievement in the teaching of biology at the university level*, Studies: Social Sciences and Education, 11(6): 201-211.

Zaitoun AM(1994). *Methods of teaching science*, First edition, Dar Al- Shorouq for Publishing and Distribution, Amman,Jordan. Pp. 69-74