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The Effect of the Strategy of Activating Prior Knowledge on the Acquisition of Syntactic Concepts among Fourth Preparatory Grade Students and the Development of their Systemic Thinking

Abstract

This study aims to identify the effect of the strategy of activating prior knowledge on the acquisition of syntactic concepts among the fourth preparatory grade students and the development of their systemic thinking. The researchers adopted the experimental design of the two equal groups as being appropriate to the nature of the research. The research sample consisted of (56) female students of fourth preparatory grade intentionally selected from Al-lfah High School for Girls. This sample was randomly divided into two groups, namely, experimental with (27) students and control with (29) students. The experimental group was taught the Arabic language using the strategy of activating prior knowledge, while the control group was taught the same subject using the traditional method. The two research groups were equalized statistically in a number of variables that are thought to affect the validity of the experiment. The researchers identified (13) syntactic concepts based on which the behavioral objectives that measure the processes of concept acquisition (definition, distinction and application) were formed. Teaching plans for both groups were designed as well. Two tests were designed to measure the research variables. The first test was on the acquisition of syntactic concepts, consisting of (39) items of multiple-choice; and the second test was on systemic thinking, consisting of (20) items. The validity, reliability and distinction of both tests were verified. The experiment lasted for 12 weeks. The results showed that the experimental group outperformed the control group in the tests of the acquisition of syntactic concepts and systemic thinking. In addition to the superiority of post-test of systemic thinking over the pre-test.

Keywords: Strategy of Activating Prior Knowledge, Acquiring Concepts, Systemic Thinking.

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Introduction

Research Problem

The problem of teaching the Arabic language lies in how to address students' minds and sentiments, and how this subject is established in the educational process. The apparent decline in interest in teaching this subject at various levels of study has played a major role in the students' lack of interest in this subject. Based on their experience as teachers of the Arabic language, the researchers observed that there is a weakness among female students in understanding the Arabic concepts and their application in daily life. This is because most female students rely on memorization and instruction in order to pass the exam only. The researchers reviewed many previous Iraqi studies in the field of Arabic language, including Al-Mufraji (2007), Al-Jubouri (2014) and Al-Lami and Amir (2017). These studies emphasized that most teachers employ teaching methods that are based on memorization of linguistic facts and information without considering the level of understanding of information based on analysis and interpretation. In addition to their lack of interest in developing patterns of thinking and the acquisition of its skills for students. This leads to a low level of understanding, and therefore their poor level of learning, their ability to think through the analysis of linguistic structures, and demonstration of the causes and effects of these different structures.

Based on the above, research problem lies in the need for modern methods and strategies that take into account the process of building knowledge in an effective way to create a suitable environment for learning, and expose the student to real problems that need to understand knowledge in order to reach the practice of non-traditional thinking processes. Accordingly, the researchers suggests employing modern strategies in the teaching of Arabic language, including the strategy of activating prior knowledge to solve the problem of female students related to the acquisition of concepts and enable them to employ the systemic thinking. Therefore, the problem is formed in the following question:

- What is the effect of the strategy of activating prior knowledge on the acquisition of syntactic concepts among the fourth preparatory grade students and the development of their systemic thinking?

Research Objective

This study aims to identify the effect of the strategy of activating prior knowledge on the

acquisition of syntactic concepts among fourth preparatory grade students and the development of their systemic thinking.

Research Hypotheses

In the light of research objective, the researchers developed the following null hypotheses:

H1: There is no statistically significant difference at significance level (0.05) between the average of scores of the experimental group students who were taught the Arabic language according to the strategy of activating prior knowledge and that of the control group students who were taught according to the traditional method in the post-test on the acquisition of syntactic concepts.

H2: There is no statistically significant difference at significance level (0.05) between the average of scores of the experimental group students who were taught the Arabic language according to the strategy of activating prior knowledge and that of the control group students who were taught according to the traditional method in the systemic thinking test.

H3: There is no statistically significant difference at significance level (0.05) between the average differences of scores of the experimental group students who were taught the Arabic language according to the strategy of activating prior knowledge in the pre- and post-tests on systemic thinking.

Research Significance

Education is a social means for achieving the goals of society. Therefore, education aims at meeting the need of preparing the individual for life according to the philosophy and trends of society. It is the mirror reflecting the image of society, and it is a continuous and permanent process that is not defined by a certain duration. It covers the entire life of the individual from cradle to grave, and works to push society to work and to push its members to solidarity, compassion, good habits and useful skills adapted to society (Al-Khalidi, 2008). The means of education in achieving its objectives is the study material. Hence, the Arabic language is an important subject that aims to raise a conscious and well educated human being in terms of health, mental, moral and creative aspects at all stages of development based on the principles and values developed in the light of the methods of the Arabic language. The Arabic language helps the human beings to achieve their goals in life in line with the accurate understanding of the nature and value of society (Mara'i & al-Hillah, 2000).

The teaching methods are the link between the subject and the learner, a tool for achieving its objectives, and one of the most effective factors in achieving the objectives of the educational process. Noting that, there is no particular teaching method that can be viewed as the best teaching method or that it is better than other methods in all cases. Thus, each method has advantages and disadvantages and may be valid and ideal with a particular subject but not suitable for other subjects (Al-Muzaffar, 2009). Thus, modern teaching strategies and methods have emerged, calling for paying attention to the learner and making him the focus of the educational process instead of the subject. Among these strategies is the strategy of activating prior knowledge that includes the mental processes practiced by the learner before, during and after learning. This strategy works to stimulate the prior knowledge of learners and make it a starting point to link it to the new information in order to have a meaningful learning. It increases the learner's self-confidence and ability to plan, observe and evaluate his work during the course of the lesson (Attia, 2010).

Thinking can only be developed by selecting a kind of thinking; therefore, researchers and practitioners in the educational system have developed a classification of types of thinking including systemic thinking. The importance of systemic thinking lies in the development of the individual's overall future vision of any subject without losing its parts. This means that the individual views the parts as an integral part of the overall framework. This type of thinking develops the ability to view relationships between things, which improves the in-depth vision, as well as the ability to analysis and construction to reach creativity (Hamadat, 2009). When students learn systemic thinking, they discover that systems are connected, so they begin to look for basic systems when facing certain issues. Consequently, their thinking automatically moves towards surveying the methods and causes, and they remember the information they have learnt in a systematic context better than that they acquired in isolation (Ismail, 2012).

Research Scope

This study is limited to a sample of fourth-grade preparatory students in the high schools (morning studies), General Directorate of Kirkuk Education, Hawija Department. It is confined to topics of the first part of the Arabic textbook for the fourth-grade preparatory during the first semester of the academic year (2019-2020).

Definition of Terms

- a. Strategy of activating prior knowledge: is defined as a set of plans, procedures and methods used by the teacher in planning and implementing the course of the lesson, and dealing with students during the lesson, thus achieving the desired objectives based on the main ideas of the strategy of activating prior knowledge (at-Tamimi, 2015).

Operational definition of the prior knowledge strategy: is a teaching strategy of metacognition employed in this study to teach the experimental group. It is aimed at stimulating the existing information of the experimental group students with the new information and linking them to increase understanding, acquire concepts and develop systemic thinking.

- b. Acquisition: is defined as a set of stimuli to which students respond and that can be recalled continuously because they are the result of a pre-arranged knowledge based on a series of ideas known by the learner (Zayer & Dakhil, 2013).

Operational definition of the acquisition of syntactic concepts: refers to the ability of students (research sample) to define, distinguish and apply the abstract syntactic concepts in this research. This ability is measured by the marks obtained by the students (of the experimental and control groups) through a test designed for this purpose.

- c. Systemic thinking: is defined as a simple method of thinking aimed at giving the learner a holistic view of situations, complex problems. If the student wants to get different results of the situation or the problem faced, then s/he must change the components of the system to give different results. Therefore, things must be dealt with systematically, and not in isolation (al-Kubaisi, 2010).

Operational definition of systemic thinking: is a complex system of mental processes that give the fourth-grade preparatory female students the ability to analyze the linguistic subjects, realize the relationships between the mental concepts constructing them and then reconstruct them flexibly and make judgements about them. These mental processes are measured by marks obtained by the female students of the research sample (the experimental and control groups) through a test designed for this purpose.

Theoretical Background and Literature Review

A. The Strategy of Activating Prior Knowledge

This strategy is one of important strategies of metacognition. It makes the prior knowledge the core of the new knowledge that is based on cognitive learning. Hence, the learner is active, systematized and having knowledge of his experiences. The strategy of activating prior knowledge is based on constructivism theory that is based on a basic hypothesis that the learner constructs knowledge by interacting with new information and previous experience in mind. In the light of this theory, this strategy focuses on the existing knowledge, information and experiences of the learner on the subject presented and how to employ this information to predict what he wants to learn and to evaluate what he has already learned after the end of learning process. Thus, this strategy is called the Meaning-Building Strategy (Mohammed, 2010).

The Importance of the Strategy of Activating Prior Knowledge

This strategy helps students become independent in stimulating their prior knowledge by well learning of new meanings. In addition, it contributes to improving cognitive understanding and making strong connections between the new knowledge and the information already known by students. It also helps students to correct previous inaccurate or erroneous information (Bahlul, 2004).

Teaching Steps According to the Strategy of Activating Prior Knowledge

The strategy of activating prior knowledge belongs to Kelven (2002). This strategy is performed in three stages defined by Kelven as follows:

1. Introducing the subject: the teacher presents the subject, writes its title on the board and provides an overview of its general framework.
2. Discussing with learners about their information on the subject: students are given the appropriate opportunity to recall what they know and whether the information they know is relevant and then discuss what they know about the content of the subject.
3. Distributing a table among learners: it includes three fields: 1) answer the question of what do I know; 2) answer the question of what do I want to know; and 3) evaluation of learning and to answer

the question of what have I learnt. The learners should be informed about how to fill the three fields in the table with the required information.

4. The teacher asks to fill in the first and second fields: the first with their existing information on the subject, and the second with what they want to know. The teacher can ask open-ended questions that help learners to direct their thinking toward the lesson objectives.
5. Reading the topic: after determining what they know about the subject and what they want to learn, the learners are asked to study the subject thoroughly in the light of what has been defined and to link what they know with what the new topic contains in order to achieve what they want to learn.
6. Evaluation: at this stage, learners fill the third field of the table, which is what have you learnt, and then the process of confirmation of learning is done by summarizing what they have learnt and writing at least three things they learned and putting them in a diagram such as a square, circle or other forms. After that, they are asked to write questions that are still stuck in their mind and could not answer them (Kelven, 2012).

B. The Acquisition of Syntactic Concepts

The syntactic concepts are the foundation of learning process, based on which the relevant facts are associated with each other. The aim of teaching concepts is to help the learner to gather positive evidence of concepts and respond to them. There are conditions for learning concepts, including:

1. The mental image of the concept must be paid attention, considering it the basis of learning so that the learner will not realize the concept without it. The mental image means the distinctive features of the concept, without which the concept remains ambiguous. It is noteworthy that the verbal image starts from and is completed by it, but it is incomplete.
2. Attention must be paid to the basic concepts necessary for the learning of the concept. These conditions have been referred to as the basic requirements or the prior expansion, which are the previous information and experiences relevant to the concept.
3. The teacher must take into account that concepts do not exist arbitrarily, so learning them is the first step to learn principles, rules, generalizations and

theories. This means that the learner eventually learns the whole frames, not a large set of lexical words.

4. It is necessary to name the mental and verbal images, which is called the concept, its symbol or word. It is noteworthy that teachers tend to move directly to the name or at best to the name and the verbal image, when the mental image is the most important thing in learning the concept (al-Hillah, 2003).

C. Systemic Thinking

Systemic thinking is a high level of thinking, through which the student can form a comprehensive vision of different topics and phenomena, can criticize and make survey, and be creative. When the student has systemic thinking and master it, s/he can interact systematically with the contemporary requirements and environmental data, and employ science and skills systematically. Then, s/he will be able to develop scientifically, and thus acquire experiences through which s/he can face the life problems at this time, which is characterized by science, technology and the Internet. This means that his/her personality develops in an integrated way (as-Salamat & as-Sufiani, 2017). The basis of systemic thinking is that the learner should be aware that s/he is thinking about clear models, that these models are observed as models, not facts, and that they have the ability to construct and analyze them. However, the construction of these models is closely linked to the available tools and forms of representation, and the tendencies and training of the individual are often found in simple relationships of cause and effect (al-Kamil, 2003).

Characteristics of Systemic Thinking

It focuses on identifying strengths within systems based on understanding of the system structure and the mutual relationships between its parts, and thus judging them to achieve the desired results.

It focuses on understanding the structure of problems in a comprehensive and holistic way, focusing on the broad context and contributing to simplifying solutions to problems.

It increases the motivation to participate in solving problems and helps integrate decision-making with management.

It expands the worldview, making the individual more aware of the assumptions and limits used to define things, urging respect for the views of others (Ismail, 2012).

Scientific Foundations for Training on Systemic Thinking Skills

Work to keep all information about the problems and objectives to be achieved.

Train the learner to analyze the problem to its basic elements.

Build diagrams to determine relationships and the correlation between the components of the problem.

Take into account the change from analysis processes to creating new relationships that did not exist before which provide a solution to the problem (al-Kubaisi, 2010).

D. Literature Review

A study conducted by Amro and al-Nator (2016) in Amman, Jordan. The researchers aimed at identifying the effect of activating prior knowledge on reading comprehension among the fourth graders with learning disabilities. The research sample consisted of (60) male and female students, divided into two groups, namely, experimental and control. The study tool was a multi-choice test that measures reading comprehension at its inductive and deductive levels. The results of the statistical analysis showed the effectiveness of employing the method of activating prior knowledge in improving reading comprehension among students with learning disabilities, as well as the absence of gender effect on comprehension.

Another study was conducted by al-Mazriri (2001) in Iraq, aiming to identify the effect of Gagne and Klausmeier's models on acquiring syntactic concepts among high school students. The research sample consisted of (91) students distributed as (30) students in group A, (31) in group B and (30) in group C. After statistical analysis of data, there were statistically significant differences between the averages of scores of the three research groups in the post-test on the acquisition of syntactic concepts. In addition to the superiority of the first experimental group over the control group, and the equality of the second experimental and control groups due to the lack of statistically significant difference between them.

Finally, Al-Jubouri (2013) conducted a study in Iraq to identify the effect of Karen and Carol's models in the development of systemic thinking in geography among the second intermediate graders. The study sample consisted of (96) female students divided into three groups, namely, two experimental groups and one control group, which included (32) students for each. The researcher used the systemic thinking test consisting of two groups, the first consisted of (24) items and the second consisted of (6) items. Some statistical tools were employed

including one-way analysis of variance and the T-test of two interrelated samples. The results indicated the superiority of the two experimental groups over the control group in the systemic thinking test. In addition to the superiority of the first experimental group that was taught according to Karen's model over the second experimental group that was taught according to Carol's model.

Research Methodology and Procedures

The research methodology included the following procedures:

A. Research Method

The researchers followed the experimental approach to achieve the objectives of the research.

B. Research Design

The experimental design is the basic part of the research. If this design is vague or inaccurate, the results of the research will be of weak value and opaque. The integrity and validity of the design is the basic guarantee to reach reliable results. The choice of experimental design is one of the most important tasks when starting a scientific experiment (al-Azzawi, 2008). Therefore, the researchers chose a partial experimental design with two equal experimental and control groups that fit the conditions of this study. The experimental group is exposed to the independent variable, the strategy of activating prior knowledge, while the control group is exposed to the traditional method of teaching. They were randomly selected. Table (1) shows the experimental design of this study.

Table 1.

The experimental design

Group	Pre-test	Independent variable	Dependent variable	Post-test
Experimental	Systemic thinking test	The strategy of activating prior knowledge	- Acquisition of syntactic concepts	- Test of acquisition of syntactic concepts
Control		The traditional method	Systemic thinking test	Systemic thinking test

C. Identifying the Research Community

- **The research community:** It means the total number of participants that the researcher seeks to generalize the results related to the problem studied to them. The elements of observation are the units that form the community and the basis for the sample. It is the overall group from which the sample is selected (Al-Dulaimi & Abdul-Rahim, 2014). The research community consists of the fourth-grade preparatory students in morning high schools in Hawija city, General Directorate of Kirkuk Education, for the academic year (2019-2020). They included (9) schools for girls, and the total number of female students was (450) according to the Statistics Division in Hawija Department.
- **Selection of the research sample:** The sample is defined as part of the community, i.e., it includes a part of the original community under study so that it carries its common characteristics that represent all the units of community (Obeidat, 2016). Thus, the researchers deliberately chose Al-lfah High School for Girls, belonging to the Directorate General of Kirkuk Education, Hawija Department, to apply their experiment. The number of the fourth-grade female students was (56) divided into two research groups, namely, (27) students for the experimental group and (29) students for the control group.

D. Equivalence of the Research Groups

Students of the two research groups were statistically equalized in relation to some variables that may affect the results of the experiment as indicated in the previous studies.

1. Age as Calculated in Months

Table 2.

The arithmetic mean, standard deviation and the two T-values for age

Group	No. of students	Arithmetic mean	Standard deviation	Freedom degree	T-value		Significance level
					Calculated	Tabulated	
Experimental	27	154.34	10.22	54	0.266	2.00	Statistically insignificant
Control	29	153.83	9.33				

2. Marks of Systemic Thinking Test

Table 3.

The arithmetic mean, standard deviation and the two T-values for marks of systemic thinking pre-test

Group	No. of students	Arithmetic mean	Standard deviation	Freedom degree	T-value		Significance level
					Calculated	Tabulated	
Experimental	27	71.03	11.09	54	1.99	2.00	Statistically insignificant
Control	29	69.60	9.77				

E. Research Requirements

- Identifying the scientific material: before starting the experiment, the scientific material that would be taught to the students was identified. It included topics from the Arabic language textbook for the fourth-grade preparatory for the academic year (2019-2020).
- Defining syntactic concepts: the abstract syntactic concepts were identified including verb, past verb, present verb, grammatical cases of verb, the nominative case, the accusative case, the assertive case, imperative verb, transitive verb, intransitive verb, subject, attribution of the verb and object. All of these syntactic concepts were presented to a group of experts and specialists; therefore, some of them were amended.
- Deriving behavioral objectives: behavioral objectives were designed in the light of the main syntactic concepts mentioned above. Since the acquisition processes of the concept is limited to three processes (namely, definition, discrimination, and application), thus (39) behavioral objectives were formed for them. They were presented to a group of experts and specialists; therefore, some of them were amended.
- Preparation of teaching plans: teaching plans were designed for teaching the Arabic language during the experiment in accordance with the strategy of activating prior knowledge to teach students of the experimental group, and in accordance with the traditional method to teach students of the control group.

Two samples of these plans were presented to a group of experts and specialists in the Arabic language and teaching methods. In light of the experts' opinions, the necessary amendments were made for them.

F. Research Tools

To achieve research objective, two tools were required: 1) test of syntactic concepts, and 2) systemic thinking test.

1) Test of Syntactic Concepts Acquisition

This test was designed due to the lack of a test based on the concepts and behavioral purposes identified. The test was of multiple-choice type. Accordingly, it consisted of (39) items, covering the material contained in the experiment, taking into account that each concept has three processes that measure the levels of definition, discrimination and application. The test was applied to a sample of pilot study consisting of (100) students from the same research community. After analyzing the results, the coefficients of difficult and easy items ranged between (0.27 - 0.81). In addition, the discriminative strength of items ranged between (0.30-0.57). The internal consistency was found using Cronbach's alpha to determine the test reliability, which was (0.82).

2) Test of Systemic Thinking

Several tests of systemic thinking were reviewed; however, they did not fit this research and the scientific material. Therefore, a test was designed to measure systemic thinking, utilizing previous studies that dealt with designing a test of systemic thinking. In addition to considering the opinions of jury members in determining the skills of systemic thinking and its measurement. All of these studies used three skills of systemic thinking, including:

- The skill of understanding the relationships between parts of the system.
- The skill of analyzing the main system into subsystems.
- The skill of constructing the system and understanding the relationships between its parts.

Based on the above, a test was designed to measure systemic thinking that included the three skills mentioned above. It consisted of (4) questions, each question has a set of items measuring systemic thinking in a systematic

chart to be filled in by the student. The total number of items in this test was (20). After completing the test, it was presented to a sample of the research community consisting of (100) students. After correcting their answers, the discriminative strength of test ranged between (0.29-0.74), which was a good coefficient of discrimination for the test. Additionally, the equation of Kuder Richardson was employed to determine the internal consistency. Hence, the test reliability was (0.81).

G. Application of the Experiment

The researchers used the following statistical means: T-Test of two independent samples, test of two interrelated samples, K², coefficient of difficult items, coefficient of discriminative items, Pearson correlation coefficient, Cronbach's alpha and equation of Kuder Richardson.

Results and Discussion

1. Null H1: for verifying the first null hypothesis, the researchers applied the test of syntactic concepts acquisition to the two research groups. By using T-test for two independent samples to measure the significance of the difference between the two averages, the calculated T-value was (4.43), which is greater than the tabulated one (2.00) at the significance level (0.05) with a degree of freedom (54) as shown in table (4).

Table 4.

Results of T-test for the two research groups in the test of syntactic concepts acquisition

Group	No. of students	Arithmetic mean	Standard deviation	Freedom degree	T-value		Significance level
					Calculated	Tabulated	
Experimental	27	31.96	5.13	54	4.43	2.00	Significant
Control	29	26.35	4.24				

This indicates a statistically significant difference between the average of scores of the experimental and that of the control group in favor of the experimental group. Accordingly, the null hypothesis is rejected and the alternative is accepted.

Null H2: for verifying the second null hypothesis, the researchers used the T-test for two independent samples. The calculated T-value was (3.11), which is greater than the tabulated one (2.00) at the significance level (0.05) with a freedom degree (54), as clarified in table (5).

Table 5.

Results of T-test for the two research groups in the post-test of systemic thinking

Group	No. of students	Arithmetic mean	Standard deviation	Freedom degree	T-value		Significance level
					Calculated	Tabulated	
Experimental	27	78.14	8.33	54	3.11	2.00	Significant
Control	29	71.60	9.48				

This indicates a statistically significant difference between the average of scores of the two research groups in favor of the experimental group. Accordingly, the null hypothesis is rejected and the alternative is accepted.

Null H3: for verifying the third null hypothesis, the researchers used the T-test for two interrelated samples. The calculated T-value was (10.23), which is greater than the tabulated one (2.04) with a freedom degree (26) at the significance level (0.05). This indicates that the result is statistically significant in favor of the post-test of systemic thinking, as clarified in table (6). Accordingly, the null hypothesis is rejected and the alternative is accepted.

Table 6.

Results of T-test for two interrelated samples in the pre-and post-test of systemic thinking for the experimental group

Group	Arithmetic mean	Standard deviation	Mean of differences	Deviation of differences	Freedom degree	T-value		Significance level
						Calculated	Tabulated	
Pre-test	71.03	8.33						Significant
Post-test	78.14	11.09	9.76	5.79	26	10.23	2.04	

In the light of the results, it is found that:

1. The strategy of activating prior knowledge is one of modern teaching strategies that led to the interaction between students and the subject with increasing activity. This positively affected their acquisition of syntactic concepts.
2. The strategy of activating prior knowledge makes the student the focus of the educational process by employing systemic thinking during the lesson including planning, systematization and evaluation; thus its role is effective and positive.
3. The nature of the strategy of activating prior knowledge and the way of presenting various activities has actively contributed to attracting the students' attention to learning. This has had a clear impact on their superiority over their peers who have studied grammar according to the traditional method.
4. The application of steps of the strategy of activating prior knowledge in the class provided more freedom and flexibility in the processes of thinking, deduction, induction and other mental skills. This has reflected positively on the development of systemic thinking among students.
5. It is well known that systemic thinking needs higher skills in thinking and the traditional teaching method relies on memorization and instruction without enhancing the subject with questions and activities that help to systemic think. Therefore, there is a clear difference in the results of systemic thinking between the students who were taught according to it and those who were taught according to the strategy of activating prior knowledge.

Conclusions

Based on results presented above, it is concluded that:

1. The strategy of activating prior knowledge can be applied to the fourth-grade preparatory students in the Arabic language.
2. The strategy of activating prior knowledge has played a part in the acquisition of syntactic concepts in relation to the area under study.
3. Teaching in accordance with the strategy of activating prior knowledge has helped to create a teaching environment whereby students can develop their own

understanding abilities and increase thinking, particularly systemic thinking, under the supervision and guidance of the teacher.

4. The application of steps of the strategy of activating prior knowledge has helped students to develop motivation to learn and tend towards the Arabic language, which has led to their ability to acquire syntactic concepts.

Recommendations

The researchers recommend the following:

1. The Ministry of Education should adopt the strategy of activating prior knowledge in teaching syntactic concepts of Arabic language at the levels of high school.
2. The results of this study should be benefited to help Arabic teachers in high schools due to the diversity of teaching strategies and models.
3. Those interested in the affairs of education, curricula and teaching methods should think about different types in general and systemic thinking in particular. In addition to include this thinking when developing the curriculum.
4. Arabic teachers should be encouraged to employ modern teaching strategies that have proven their success.
5. The Arabic teachers should use effective teaching strategies and models in teaching syntactic concepts in order to acquire them, especially the strategy of activating prior knowledge, which has been effective as proven in this research.

Suggestions

The researchers suggest conducting future studies to identify the effect of the strategy of activating prior knowledge on:

1. The achievement of the fifth-grade preparatory students in the subject of Arabic language and the development of their reflective thinking.
2. The acquisition of syntactic concepts among the second-grade intermediate students and developing their scientific exploration.
3. The development of literary skills among the fifth-grade preparatory students and their imaginary thinking.

References

- Al-Azzawi, R. (2008). *Introduction to the scientific research methodology*. Amman, Jordan: Dijla Press.
- Al-Dulaimi, I., & Abdul-Rahim, S. (2014). *Scientific research: Its basics and methods*. Amman, Jordan: al-Radhwan Press.
- Al-Hillah, M. (2003). *Teaching Methods and Strategies*. Amman, Jordan: University Book Press.
- Al-Jubouri, F. (2014). *Acquisition of syntactic concept using summarization method: its basics and programs*. Amman, Jordan: Al-Yazouri Scientific Press for Publishing and Distribution.
- Al-Jubouri, M. (2013). *The effect of the Karen and Carol's models on the development of systemic thinking among the second-grade intermediate students in geography*. (Unpublished Master thesis), Tikrit University, Iraq.
- Al-Kamil, H. (2003). *Constructivism as an introduction to systematism*. The Fourth Arab Conference on Systemic Approach to Teaching and Learning, Center for the Development of Science Teaching, Faculty of Education, Ain Shams University.
- Al-Khalidi, M. (2008). *Education system*. Amman, Jordan: Al-Safaa Press.
- Al-Kubaisi, A. (2010). *Systemic thinking: its use in learning and education, deduced from the Holy Quran*. Amman, Jordan: de Bono Press.
- Al-Lami, S., & Amir, A. (2017). The effect of the Appleton model on acquiring syntactic concepts among fourth-grade preparatory students. *Journal of the College of Basic Education for Humanities*, 17(34), 423-435.
- Al-Mazrori, S. (2001). *The effect of Gagne and Klausmeier's models on acquiring syntactic concepts among high school students*. (Unpublished PhD thesis), University of Baghdad, Iraq.
- Al-Mufraji, M. (2007). The effect of short reports on the acquisition of syntactic concepts among students of the College of Education at University of Kirkuk. *Journal of Tikrit University for Humanities*, 14(7), 178-222.
- Al-Muzaffar, A. (2009). *Teaching and examination methods*. Islamic Schools Network, Karachi, Pakistan.
- Amro, M., & Al-Nator, M. (2016). *The effect of activating prior knowledge on reading comprehension among sample of students with learning difficulties in Amman*. (unpublished Master thesis), University of Jordan, Jordan.
- As-Salamat, M. & as-Sufiani, A. (2017). The effect of teaching mathematics using an active learning strategy on developing the thinking skills among the intermediate school students. *International Journal for the Development of Excellence*, 14(14), 93-120.
- At-Tamimi, H. (2015). *The effect of the strategy of activating prior knowledge on the achievement and tendency toward geography among the second-grade intermediate students*. (unpublished Master thesis), Babylon University, Iraq.
- Attia, M. (2010). *The overall quality and modern teaching*. Amman, Jordan: Al-Safa Press for Publishing and Distribution.
- Bahlul, I. (2004): Recent trends in metacognition strategies in teaching reading. *Journal of Reading and Knowledge*, (30), 148-280.
- Hamadat, M. (2009). *The system of teaching mathematics, English language, educational activities, education technology, creativity, information systems and quality system*. Amman, Jordan: al-Hamid Press.
- Ismail, D. (2012). *The psychology of systemic thinking*. Cairo, Egypt: Arab Thought Press.
- Kelven, (2012). Instructional design for situated, learning, Educational Technology Research and Development.
- Mara'i, T., & Al-Hillah, M. (2000). *Design and production of teaching tools*. Amman, Jordan: Al-Masirah Press for Printing, Publishing and Distribution.
- Mohammed, A. (2010). *Teaching and learning strategies: Models and applications*. Al-Ain, UAE: University Book Press.
- Obeidat, T. (2016). *Scientific research: Its concept, tools, methods*. Cairo, Egypt: al-Fikr Press.
- Zayer, S. & Dakhil, S. (2013). *Recent trends in Arabic language teaching*. Baghdad, Iraq: Al-Murtada Press for Publishing and Distribution.