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# The effect of the paksa method on primary students' achievement of the subject

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***Abstract***

*The aim of research is to identify the impact of the paksa method on primary school students' achievement of the academic subject and also to verify the research goal, the following zero hypothesis was formulated. There is no statistically significant difference at the level of significance (0.05) between the average levels of achievement of students (the experimental group) who study according to the method (paksa) in science and the average levels of students 'achievement (control group) in the subject of science who study according to the method Regular (discussion and questioning) experimental design with experimental and control group and post-test subjects was chosen.*

*The research community was represented by the fifth primary class students (Al-Dhad Elementary School for Boys), whose number (70) was distributed as two groups (A, B) by the experimental group (35) and the control group (35), and by random appointment, group (A) and (B) were selected. As the research sample, the groups were rewarded in the variables (intelligence and achievement of the previous) in the academic year (2018-2019).*

*The experiment was applied in the first semester of the academic year (2019-2020). The researcher taught two research groups on his own according to the necessary teaching plans, the Baxa method for the experimental group and the usual method for the control group.*

*The results of research showed that using the Z-test for two independent samples of equal number are stated according to the experimental group students who studied according to the (paksa) method were superior to the control group students who studied according to the usual method, as the calculated (Z) reached (2.32), while the (Z) tabular reached (1.96) and from these results he concluded The researcher stated that teaching according to the Baxa method had an effect on students 'achievement, as the effect size reached (0.04) with a small estimate compared to the standard (0.01). Accordingly, the researcher made a number of recommendations, including: - The adoption of the Baxa method in the subject of science and teacher training during service.*

***Keywords:*** *The effect, Paksa style, Collection*

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# I. Introduction

### 1.1: Research problem:

It is noticeable that the educational reality in our schools faces a low level of achievement in the subject of science and the weakness of the processes of science, so the pupil in the fifth grade of primary school knows the first time the science subject as a separate and integrated practical subject and has many abstract concepts that need to stimulate thinking for him in order to understand the subject from During the creation of situations and activities that challenge his abilities and focus on his internal motivations, as it is no longer acceptable to adhere to one method of teaching such as the method of lecture and abstract memorization; because it is no longer sufficient to meet the requirements of the educational process and is no longer able to respond to the goals of education in light of the modern vision and qualitative leaps witnessed in the areas of life .

### 1.2: The importance of research

The era in which we live has been described as the age of science, knowledge and technological revolution, and through the applications of modern science that affected every aspect of our lives, the progress and development of nations has been measured by the extent of their development in modern practical fields and the extent of their ability to absorb and use technology in different areas of life, as the school plays An important role in educating learners and guiding them towards correct thinking and developing their capabilities and skills and developing them. Accordingly, it necessitated changing our curricula and the accompanying methods of teaching methods and methods, skills, experiences, means and techniques and certain educational techniques.

Therefore, it requires that science curricula focus on the importance of the learner acquiring scientific knowledge and providing him with the skills of thinking so that he can apply what he previously learned in finding alternative solutions to face life problems.

Cognitive psychologists, practical education, and teaching methods specialists have developed a large number of teaching methods and techniques and have been brought before science teachers, by

Therefore, it requires that science curricula focus on the importance of the learner acquiring scientific knowledge and providing him with the skills of thinking so that he can apply what he previously learned in finding alternative solutions to face life problems.

Cognitive psychologists, practical education, and teaching methods specialists have developed a large number of teaching methods and techniques and have been brought before science teachers, by employing them and using them to show that they can choose the best path and the most successful techniques according to the nature of educational attitudes according to criteria specific to those attitudes.

Among these methods is the paksa method, which is one of the customary methods that includes some important steps that begin with identifying the problem and then collecting information and organizing it up to the

solution. These steps help develop the learner's thinking and encourage the generation of ideas, develop flexibility, and increase the ability of learners to generate new ideas, and exceed those Results to support

A number of personal aspects related to creativity such as self-confidence, independence, intuitive thinking, perseverance, to reach an early solution to the problem.

The study of science enables teachers to acquire a wide range of mental and psychomotor skills and helps them to explore and interpret natural phenomena through its various fields and all of this shows the importance of the science subject and the reason for its presentation within the school curriculum and make it a subject taught throughout the stages of their learning.

Therefore, the task of teaching basic sciences is to teach the learner how to think, not how to memorize and remember school subjects without assimilating them and helping him to use information in practical life.

_ And based on the above, the importance of the research will be eliminated by the following:

١- The importance of the science subject as it helps to understand the living and non-living environment.

٢- The importance of using methods and methods of teaching science because of its effectiveness in raising the level of achievement and thinking processes, including the paksa method

3- Research results may benefit science teachers and supervisors who specialize in identifying the impact of the paksa method on the achievement of learners in science for the fifth grade of primary education through reviewing and benefiting from plans and subject testing for purposes of improving the level of science education.

٤- The importance of using modern methods and methods of education, including the paksa method, because of its characteristics and advantages that may help raise the level of education and its development.

5- The current research may be considered a qualitative addition to the educational library, as it benefits learners to view it as a previous study.

**1.3 The research goal and its null hypothesis:**

The current research aims to custom:

The effect of the paksa method on primary students' achievement of the subject.

For the purpose of the investigation of the research the null hypothesis was formulated

- There is no statistically significant difference at the level of significance (0.05) between the mean scores of the experimental group for those who studied according to the paksa method and the mean scores of the pupils of the control group for those who were studied according to the usual method in the achievement test.

**1.4: Research Limits**

١- Fifth-grade primary school students in Al-Daad Primary School of the General Directorate for Diyala Education / Baladruz Education Directorate.

2 - Second semester of the year (2019-2020).

Teaching classes (first, second, third, fourth and fifth) from the science book for the fifth grade of primary school, 2nd edition, Ministry of Education, for the year 2018.

**1.5: Defining terms**

1: It is defined as:

- The ability to reach the limited goals and reach the desired results. This term is used in educational fields, methods, methods, strategies and teaching models.

- The outcome of a desired or unwanted change that occurs in the learner as a result of the intended learning process.

- What a person sees as milestones, fingerprints, or effects in the thing that affects him, as there is an influence in it in the sense of an independent and not dependent variable.

Procedural definition: It is the effect that the independent variable (paksa method) has on attaining the experimental group students and comparing it with the established criterion.

2 The style of paksa:: is defined as:

A method based on the idea of solving the problem in an organized manner according to a set of successive steps to reach the right solution.

A method specifically designed to help learners solve problems and generate new ideas regardless of the field of application.

- Practices and mental activities that the learner performs individually or under the direction of the teacher in order to reach the correct solution to a problem.

Procedural definition:

A method adopted by the researcher when teaching subjects of science subject to fifth-grade primary students (the experimental group) according to successive organized steps in order (identifying the problem, collecting information and discussing new ideas and discussing them, organizing information, testing relationships that link ideas, refocusing on the problem and discovering new ideas and relationships, Presenting ideas to others to know their opinions and views, implement the agreed amendments, and repeat the previous steps) in order to improve the level of students 'achievement in the experimental group of science.

## II. Theoretical background

And previous studies

**2.1 the style of Paksa**

The paksa method is one of divergent (divergent) thinking methods, where it is defined as thinking that requires the generation of many different responses to a single question or problem.

Branched thinking was also defined as thinking that is characterized by originality with a focus on the diversity of products and their quality, and includes the production of new information and the generation of new information from given information in addition to the limitations in this type of thinking and expand the search process and production is profusely and is sometimes called absolute thinking.

Manifold methods are directed primarily to help learners in solving problems, and divergent thinking (manifold) differs from other types of thinking in that it is used in creative problem solving and depends on a number of principles, namely:

The first principle: - Postponing judgment on things: It means postponing judgment and evaluation until the completion of generating a large number of possibilities and alternatives.

The second principle: - Striving towards more quantities of ideas: As distinct ideas are produced among many ideas, meaning that the larger the number of ideas generated, the greater the possibility of original and distinct ideas. This principle confronts the learner towards seeking to generate the largest number of ideas and alternatives and helps to achieve The goal is to express in a few words, such as making a title.

The third principle: - Starting off: This principle emphasizes recording all incoming ideas with no concern that thinking is useful or not. Often, unconventional ideas are the way to find new alternatives, as finding a new relationship between ideas may be the result of ideas that seem irrational. Or unhelpful, the launch is to let the imagination go beyond the ordinary.

The paksa method is a sequence of steps the learner goes through in order to reach a solution to the problems facing it, and requires the use of information and previous ideas learned and the generation of new ideas to search for problem solving through organizing ideas and re-discussing them and testing the relationships between ideas about the problem: The paksa letters indicate:

| | |
|---|---|
| P | - problem Find |
| A | Analyses of the problem |
| K | Knowledge of idea |
| S | -Selection the id |
| A | Application idea |

Paksa style steps

1- Define the problem, its causes and objectives of its study: The teacher assists learners in identifying the problem by identifying it, the goal of its study and its importance, and after clearly identifying it, the teacher writes it in a clear line on the blackboard.

2- Gathering new information and ideas about the problem, discussing it, and identifying new ideas about it: The teacher in this step collects ideas and information from learners about the problem, and this information may be from the book, the school, or from other sources and is discussed to capture all aspects of the problem.

3- Organize information in a way that is easy to understand: In this step, the information and ideas collected are arranged so that they can be used effectively to create a mental or intellectual framework through which learners can clarify information and ideas.

4- Choosing the relationships that link the ideas related to the problem, comparing them and identifying aspects of agreement and difference: This step aims to reveal the relationships and links between the new problem and the previous information among learners by the ability to link between the new ideas and the problem, the ideas are compared and identifying similarities and differences between them, including It helps in finding relationships, and the goal of using the comparison is to facilitate dealing with a set of information or problems, which helps in finding solutions due to similarities and differences.

5- Refocusing on the problem and discovering new ideas and relationships that were not previously known without thinking about their criticism at the present time: The teacher in this step encourages learners to present as many ideas and find relationships between ideas, which helps to find new better ideas while delaying the use Criticizing ideas and commenting on them, because criticism does not help in finding solutions, rather it limits the learners' desire to participate and present new and strange ideas.

6- Objectively re-discussing ideas, reformulating and redeveloping them: the teacher gives freedom to learners to discuss in and between them and accepts all ideas presented and then reclassifies and reformulates them in a new style according to specific criteria such as being brief in formulating the idea and containing it seriously and are acceptable and reasonable.

7- Presenting new ideas to others to know their opinions and views in criticism and amendment: After putting the ideas into discussion, the teacher requires learners to present their ideas and then turn to the process of selecting and classifying ideas and reconciling with what has been reached after they have identified the points of difference of the ideas presented.

8- Implement the agreed amendments: This step depends on the goal of the method, in which results and final solutions to the problem are reached.

9- Repeat the previous steps.

What is meant by the paksa method here is the renewal in dealing with and treating the problem, whereby a problem is presented to learners that may provoke their thinking, and they begin to search for information and ideas related to the problem and collect them, then analyze them, link them and fragment them, and then reach the appropriate

solution, the teacher should when using the paksa method take into account the response to questions Learners and encourage them to define each other's ideas and those of their teacher, but also within the limits of literature, objectivity and science, and help to realize the importance of postponing judgment and decision as much as possible in order to allow the opportunity to further think about the problem at hand, and clarify the teacher to them that not all problems are subject to immediate and rapid solution, but must It is gradual in its solution with an understanding of every step that is taken in the way of that, and giving the students enough time to think well, and the necessity that the steps of the Paksa method be carried out within logical stages that begin to define the problem and end with its application and implementation.

The importance of the paksa style

1- It helps to gather the most ideas on a specific topic in a relatively short period of time.

2- It helps in linking the previous information and the new information with the learner.

3- Organizing the world around the learner and creating many meaningful relationships.

3- It is an easy process that helps learners to visit their self-confidence due to the lack of criticism or restrictions on producing ideas.

4- Making the learning activity more centered around the learner

5- Helps reduce the intellectual inactivity of learners.

6- Helps reduce the intellectual inactivity of learners.

7- Encouraging the largest number of learners to find new ideas.

The pedagogical foundations of the paksa style

The paksa style is based on the following foundations:

1- It develops the spirit of research and exploration, and in this way it is consistent with the method of scientific and investigative research to reach the results.

2- He is interested in the two aspects of knowledge (material and method) because he relies on the previous information to solve the new problem as he reaches new information and it is the results that the learner reaches when solving the problem.

3- It focuses on the learner's self-activity in solving the problem, and thus he agrees with the modern methods and teaching methods that make the learner the focus of the educational process.

The second axis:

**2.2 A study** dealing with the paksa method as an independent variable and continued

Al-Khatib Study (2016):

Place of study: Iraq

- The aim of the study is to identify: the effect of the paksa method on achievement and creative thinking among middle school students in intermediate chemistry.

- The sample of the study consisted of (109) female students who were chosen by simple random appointment from two divisions (A and C), and (C) was chosen to represent the experimental group and (A) to represent the control group, by (54) students for the experimental group and (55) students to the control group Community representation is 61% and is a good representation in empirical research.

- Study tools: The researcher prepared an achievement test that included (40) paragraphs, including objective paragraphs represented in (supplementation, multiple choice), including an article with a short answer, the value of the constant used for him (0.82) in addition to the creative thinking test for (Torrance).

- Statistical means: variance, the zest test for two independent samples of equal numbers, the Koder Richardson-20 equation, the difficulty factor for the objective paragraphs, the differential strength equation for the objective paragraphs, the Cooper equation, the Chi square, the point-basil correlation coefficient, the effect size equation.

**2.3 Extent of benefit from the previous study:**

1- Determine the study methodology and take appropriate measures in a manner consistent with

Current search.

2- Statistical methods test in proportion to the objectives of the current research.

3- Learn about many sources that serve and enrich the current research.

4- Take advantage of the procedures in preparing the research tools

## III. Research methodology and procedures

**3.1 Research method**

The researcher followed the experimental approach to verify the aim and the hypothesis of the research, as the experimental method is characterized by its ability to control the various factors affecting the phenomenon to be studied, and begins with the existence of a problem that the researcher faces and requires him to search for its causes and the conditions that affected it, by conducting experiments.

**3.2 the experimental design:**

Experimental design means "controlling the variables affecting a phenomenon with the exception of one variable, the researcher normalizes and changes it in order to define and measure its effect on the phenomenon under study. To achieve the research goal, the researcher chose experimental design with two groups (experimental and controlling) from those with post-test to obtain science subject, for being Suitable for the purpose of research and validation of the null hypothesis, as shown in the diagram.

| After testing | Independent Variable | Parity of the two groups | Groups |
|---|---|---|---|
| my education | Paksa style | Intelligence<br><br>Previous achievement in science | Experimental |
| | The usual way. | | The officer. |

Experimental design scheme for the two groups (experimental and control) with the post test

**3.3The research community and its sample:**

The current research community represented the fifth primary school pupils in Al-Dhad Elementary School for Boys for the academic year (2019-2020), which was intentionally chosen from one of the schools affiliated to the General Directorate for Diyala Education / Education of Baladrooz, as the research community reached (70) students with two (A, B) and adult Their number is (35, 35) pupils, and the researcher was deliberately chosen for the school for reasons including:

1. Full cooperation from the school administration and the facilities provided for conducting the experiment.

2. Most of the pupils from a single geographical area constitute a socially, culturally and economically homogeneous environment, which facilitates the researcher's actions with parity between the students of the two research groups.

As for the research sample, it was chosen by simple random designation, the two (A and B) students, who were (70) students, and (B) were chosen to represent the experimental group and (A) to represent the control group, by

(35) students for the control group and (35) students for the experimental group. After excluding the students who failed statistically, the research sample reached (70) pupils, representing a community representation of 61% and a new representation percentage in experimental research, table

| Number of pupils after exclusion | Number of excluded pupils | Number of pupils before exclusion | Division | Group |
|---|---|---|---|---|
| 35 | 0 | 35 | B | Experimental |
| 35 | 0 | 34 | A | The officer. |

| | | | | |
|---|---|---|---|---|
| 70 | 0 | 70 | | Total |

Equivalence of the researcher groups (experimental and control)

Parity means making the two groups homogeneous and equal in exactly the same circumstances.

To confirm the equivalence of the two groups, the researcher performed an equivalence in some of the variables that are directly related to conducting the experiment, namely (intelligence, previous achievement) in the science subject for the fourth grade of primary school, as the researcher made the two groups equal to the research, and what follows is a presentation to conduct the equivalence of the two research groups with the following variables:

• Intelligence: - The researcher adopted the Raven test for successive matrices to compare the degree of intelligence, the experimental and stressful research groups, as it is suitable for the Iraqi environment and is characterized by honesty and consistency as a result of application in many local studies.

It is considered one of the most common measures of intelligence and is used in measuring the general actual ability as one of the intelligence tests, which is free from the language factor. The test consists of (60) items distributed in groups (A, B, C, D, E) at the rate of (12) items for each A group and every correct answer to the paragraph is one degree, meaning that the sum of the correct answers is the score recorded by the student and specified between (60/60). The test was applied to the researcher's sample on (2/2/2020) and on the same day for both groups, the answers were corrected and the grades found Obtained by the disciples.

Appendix (1) (Appendix of students 'grades, two groups, research in IQ test

| Level of significance | The value of the value of the value | | Degree of freedom | Contrast | Average arithmetic | Number of pupils | Group |
|---|---|---|---|---|---|---|---|
| | Tableschedule | Calculated | | | | | |
| Non-D0.05 | 1.96 | 1.11 | 60 | 18.5 | 38.3 | 35 | Experimental |
| | | | | 76.72 | 35.7 | 35 | .The officer |

Previous achievement in science subject: -

The researcher obtained scores in the science subject for the two groups, the researcher appendix (2) (Supplement of students 'scores for the two research groups in the previous achievement).

For the academic year (2018-2019) for the fourth grade of primary school, and after adopting the statistical treatments represented by using the Z-test to find out the significance of the difference between the two averages, it was found that the calculated z-value (0.6) is less than the tabular and (1.96) at the level of significance (0.05) And a degree of run (60), which indicates that the experimental and control groups are statistically equivalent in the achievement variable in the science subject.

Statistical significance of two research groups in the previous achievement in science

| Level of significance | The value of the value of the value | | Degree of freedom | Contrast | Average arithmetic | Number of students | Group |
|---|---|---|---|---|---|---|---|
| | Tableschedule | Calculated | | | | | |
| Gerdal 0.05 | 1.96 | 0.6 | 60 | 59.55 | 62.96 | 35 | Experimental |
| | | | | 78.81 | 16.26 | 35 | .The officer |

**Display results: -**

Zero hypothesis: There is no statistically significant difference at the level (0.05) between the average levels of students 'achievement in the experimental group in science. And who are studying according to the Paksa method of science. The mean of the achievement score is the control group who studies according to the usual way.

Through the results of the achievement of the science subject for the experimental and control research groups and the attached (3), it appeared that the average grades of the experimental group students who studied according to the paksa method had reached (13.7) and the variance (348.3), while the average score of the students of the control group who studied the subject The same in the usual way (4,67) and variance (117,5). Using the Z-test for two independent samples equal in number, it appeared that the Z-value was (31,31), which is greater than the tabular Z-value of (1.96) at the level of significance (0.05). And with a degree of freedom (60), which indicates the superiority of the experimental group students who studied according to the Paksa method over the control group students who studied according to the usual method, and thus rejects the zero hypothesis, meaning that there is a statistically significant difference between the two groups and the difference was in favor of the experimental group as this Paksa method has an effect In the achievement of fifth grade primary school students.

Table No. (3)

Statistical significance of the average scores of the two research groups in the final achievement.

| Level of significance | Tableschedule | | Degree of freedom | Contrast | Average arithmetic | Sample | Group |
|---|---|---|---|---|---|---|---|
| D 0.05 Statistical | 1.96 | 2.32 | 60 | 348.3 | 13.7 | 35 | Experimental |
| | | | | 111.75 | 4.67 | 35 | .The officer |

To calculate the effect size, the researcher calculated the effect size for the future stimulation (Paxa method) in the dependent variable (achievement) in the science subject and using the equation for the effect size if the effect size measures the strength of the relationship (correlation) between the variables under study of the paxa method and the students 'achievement of the science subject and means The magnitude of the effect is an index number of the significance of the study result, such as the strength of the relationship or the change resulting from the intervention of the independent variable from the dependent variable.

Using one of the measures of the size of the statistical effect according to the study sample (related or unrelated thresholds)

As the researcher has calculated the square of ita (2 η) as in the table of this table, constant and measurement.

Standard reference measurement to determine the effect size

| Impact size | | | The tool used |
|---|---|---|---|
| Large | Average | Small | η |
| 0.14 | 0.06 | 0.01 | |

Value (Z) 2 η)) and the effect size

| Impact size | Values | Calculated value | ValuesZ Tabular |
|---|---|---|---|
| Small | 0.04 | 2.23 | 1.96 |

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