

# The effect of PQ4R strategy on the achievement of second-grade students average in reading and text material

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**Abstract:** This research is determined by a sample of the second middle-class students in the martyr Qasim Tarish School in the Ali Sharqi district of Maysan Governorate, and the topics of the reading book and the texts to be taught to middle second-grade students in Iraq for the second semester of the 2017-2018 academic year. The researcher adopted the experimental method with partial control, to suit it with the nature of the research. The research sample consisted of (60) middle-grade students, and they were randomly selected from the middle of the martyr Qasim Tarish in the Ali Sharqi district of the Maysan Governorate for the academic year 2017-2018, and this sample was divided randomly by two groups, one of them (one). The reading and the texts are strategic (PQ4R) and it was the share of Division (B), and the control group consisted of (30), they studied in traditionally, and they were from the share of Division (A). The following changes (the age, calculated by months, and the Arabic language scores for the previous academic year, and by using a square (such as) in the academic achievement variables for parents and mothers After the researcher identified the subjects of reading material and the texts that will be studied during the duration of the experiment represented by the second course, the researcher formulated the behavioral goals, prepared the teaching plans for them, presented them to a group of experts and specialists to judge their validity, then made the necessary adjustments and became ready plans for application in the light of their opinions to measure the achievement of students of the two research groups in the topics studied by the researcher himself, I prepared an achievement test consisting of (20) objective test items of the type (multiple choice), and the researcher confirmed the validity of the test, calculating its stability, and from the discriminatory forces and factors of paragraph difficulty. After the end of the experiment that started on 19/19/2018 and ended on 4/30/2018, the researcher applied the achievement test to the students of the experimental and control research groups, and after analyzing the results of the students' answers and statistically treating them using the T-test for two independent samples (t-test) to find out the significance of the difference At the level of (0.05) between the two research groups, it is clear that: The presence of a statistically significant difference at the level of significance (0.05) between the average score of the second-grade students average who are studying according to the strategy of Toms and Robinson PQ4R)) and the average score of the average second-grade students who studied according to the usual method of achievement and the result was in favor of the experimental group. The researcher recommended adopting a strategy (PQ4R) in teaching reading and texts for the second intermediate grade, and caring for teaching reading material for neglect and making time for her class to teach the rules or rest. The researcher suggested conducting a study similar to the current study in other study stages such as junior high, and conducting a similar study in Reading and text material aims to identify the impact of using the PQ4R strategy in creative thinking, critical thinking, acquisition of concepts, and direction towards the material.

*Keywords:* PQ4R strategy, achievement, text material

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## Introduction

The problem of research: Teaching reading is a real problem for generations, and successively is defined by the school, learners, parents, and all those who are concerned with education. This problem is highlighted in the low level of

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students in reading at all educational levels. (Youssef, 2003, p. 5). The weakness of students and their low level of reading (reading) has become a public phenomenon indicating the students' inability to read correctly. This has occupied the educational community, and many questions have been raised about who is responsible for this decline (Madanat, 1985, p. 9). This decline is due to the reading level, which led us to say that the level of students reading is too low, and this calls us to think about the reasons for this weakness, which may be due to the school or students and the textbook. (Ibrahim, 1973, p. 134). There are many reasons for the weakness of the reader, neglecting the growth of students in reading in the early stages of study, moving from one school to another or from one place to another, the poor treatment that the teacher deals with his students, delayed maturity of students, and weak my sense Sight and hearing, and less attention of students to the lesson. (Al-Samouk, 2005, p. 134). And other factors help to strengthen this weakness, which is the lack of concentration of students on reading material, which is a subject to obtain a degree, not to develop reading skills in the field of understanding, criticism, and employment. (Taher, 2010, p. 3). Weakness in reading can be defined as a failure to achieve its goals in terms of the reciter, interacting with it and realizing the meanings and ideas in it, and here the school must recognize the errors and work to address them because starting in the language and understanding an educational requirement It must be achieved by all learners. (Eid, 2011, p. 61). The researcher realized this problem by examining previous studies of researchers who studied in their research the weakness of students in reading or reading in general, to find appropriate solutions to this problem, and from these studies, the study of Al-Jarjari (2002), and Al-Rubaie's study (2006) and the study of Al-Arki (2007) and other studies. After examining the researcher on studies and research, he found that the reality of teaching reading material in our educational institutions that there is negligence by teachers of this subject and a clear weakness among students in their ability to absorb what they read, the usual concept of reading remains firmly established In their minds, their reading does not exceed Converting written symbols into spoken words, listing words and forming sentences without being exposed to an understanding of these symbols, analyzing them and criticizing them and benefiting from them in solving their life problems. It is a time to rest from the trouble of the rest of the lessons, and all they do during the lesson in is to ask his students to produce the book and read the topic in a sequential reading from some good students until the lesson ends and the meanings of some words may be mentioned or not mentioned, but this case goes beyond that of some teachers Convert a lesson Reading is a study of grammar, literature, or rhetoric because reading in his view is of no value. (Abdel Hamid, 2006, pp. 52-53) And the dominant characteristic of teaching is the use of the traditional method, which is dominated by the nature of conservation and memorization, as the educational community remained on this approach despite the many recommendations and studies that require moving away from it because of its great impact, which reduces the level of achievement, and this is what To make students take a solid template in education as a recipient of the information and from one stage to another school stage without any change in their teaching style, and what confirms this talk is the existence of some phenomena such as the lack of quality of achievement and the suffering of a large number of students in various stages of education, especially secondary education, from the automatic preservation of information Since T. Thayer complaints from students, forget the suffering material that they had sustained her and ensured good retrieval before the test, but they were unable to retrieve it well when their performance tests. (Al-Sultani, 2011, p. 20) Hence the need has arisen in our society for appropriate solutions by which these problems can be overcome as traditional teaching methods are unable to play their role in this field and this is what requires investigating the effects of the use of modern methods and strategies to lead to education for the better. Therefore, the current research problem was crystallized in the poor level of student achievement and their inability to absorb and retain the vast amount of information for a longer period.

### **Hypothesis**

The research goal: The researcher set the following zero hypotheses: (There is no statistically significant difference at the level of significance (0,05) between the average scores of the experimental group whose students study reading material and the texts according to PQ4R strategy, and the control group whose students study The material itself is according to the traditional method of achievement in achievement).

**Fifth: Research boundaries** / the current research is determined by 1- Human boundaries: second-graders average. 2- Spatial boundaries: The martyr Qasim Tarish intermediate school for boys in Ali Sharqi district, Maysan Governorate. 3- Time limits: The second semester of the academic year 2017- 2018 Sixth: Defining the Terms First: The Impact Defined by:

- (Ibrahim) The ability of the worker understudy to achieve a positive result, but if this result was negated and not achieved, then the worker may be one of the direct reasons for the occurrence of negative consequences (Ibrahim, 2009, p. 30)

(Shehata and Al-Najjar): The result of a desirable change that occurs in the learner as a result of the learning process. (Shehata and Al-Najjar, 2003, p. 32)

Procedural definition: The change that is caused by the use of the PQ4R strategy in achieving the second average student's achievement in the reading subject.

**Second: The strategy was defined by Schunk:** "It is plans directed at successfully performing tasks, or producing systems to reduce the level of dispersion between the individual's current knowledge and the goals he wishes to achieve." (P113, 2000, Schunk).

- (Shubr): "a set of procedures and means used by the teacher to benefit from educational experiences and achieve the desired educational goals." (Shabr, 2005, p. 21)

Procedural definition: A set of procedures, steps, and activities that the researcher follows to achieve specific educational goals and for a specific time for the second-year middle school students in the reading subject. Third: A strategy (PQ4R) defined by:

- Abdel-Khaleq: A strategy used to stimulate memory and improve the student's ability to understand and remember the material. (Abdel-Khalek, 1997, p. 305)

Procedural definition: It is the use of a strategy (PQ4R) in teaching second-grade students to average in its six steps in a self with the subject covered by the researcher experienced in the nine units in the reading book and texts for the second-grade average to reach remembering and a better understanding of the subject.

**Fourth: Achievement** - Webster: What the student accomplishes in quantity and quality within a specific semester. (Webster, 1981, p16.)

- (Al-Saleh): The knowledge obtained or the skills acquired in one of the subjects, which was determined by the test scores from the teacher. (Al-Saleh, 2004, p. 26).

Procedural definition: It is the grades obtained by students of the research sample in the achievement test prepared by the researcher after studying the subject of reading and the texts in the experiment.

Fifth: The second intermediate grade: It is the second of the three grades of the intermediate stage in the education system in Iraq, in which successful students from the first grade of this stage are accepted and whose average age is (13-14) years. (Ministry of Education, 1996, p.).

**Sixth: Reading - Language:** See (The thing is reading: read it by reviewing it continuously, and the book: So and so read by So what he has access to it (Mustafa, D.T., p. 56) Terminology: It is an organized mental, organic, and emotional process that includes extracting meanings and understanding ideas. (Al-Naimi, 2001, p. 56). Operational Definition: It is a textbook devoted by the Ministry of Education to the intermediate and preparatory grades, including the second intermediate class (the research sample) to extract meanings and values of ideas.

## The researcher

The researcher relied on two axes in this chapter, the first topic (theoretical background): This chapter includes a base for the foundations on which the research is based by reviewing the main elements discussed in the research, which is the employment of the following axes.

**PQ4R first is a concept of strategy** a metacognition strategy, developed by Thomas Robinson in (1972). It refers to the measures taken to display and organize a specific teaching method to achieve specific goals, and it can be seen on the basis that it is one of the self-teaching methods that improve the student's ability to understand and understand the readable material. To develop some mental skills automatically and then remember and retain them while keeping their impact. (Atiyah, 2010, p. 92)

Some of them call the six system steps in reading and mean the six letters of the strategy, which are the **abbreviation of the following words:**

- Which introductory look at the topic. Preview 1- word
- That means asking questions. Question 2- Word
- Which means Read3-word
- Which means Reflect4-word meditation
- Which means Recite5 word heard
- Which means see (Review6 – word

It aims to develop self-awareness of understanding that helps students examine their understanding and develop their skills so that they become aware of what they are learning and have the ability to master the processes of understanding and reading skillfully. There are many definitions of this strategy, so (Al-Arrash) defined it as (a series of codified and planned procedures based on improving the student's ability to understand the material and remembering it) (Al-Arrash, 2013, p. 110). (Afanah and the army) defined them on the basis that they (one of the strategies Metacognition is a strategy

based on clarification and details, as it helps students to memorize and remember what they read. (Afanah and the army, 2007, p. 90). It is worth noting that the strategy (PQ4R) helps the student to make his learning process faster, more effective, and subjective, which contributes to developing awareness of cognitive processes and different skills, and this enables him to recount ideas and create interconnected mental relationships which increase the possibility of storing that knowledge and skills in long-term memory. In turn, makes it easy to use.

#### **PQ4R II // Strategic Steps**Six letters of the PQ4R strategy and its translation

1- The letter (P) is taken from the word (Preview), which means examining the parameters of the readable text by taking an introductory look at it to know

Basic ideas and help for him.

2- The letter (Q) is taken from the word (Question) which means asking questions about the subject under study, where each student directs some written questions to himself after creating a general intellectual image of the text read from the previous step.

3- The first letter (R) is taken from the word (Read), which means to read, and this step aims to answer the previous questions where this process is done by reading the text and then the questions posed in an individual or group manner with the correction and guidance of the teacher.

4- The second (R) is taken from the word Reflect, which means meditation, and this step was put in place to add illustrative additions by thinking about examples and establishing links and relationships with things already known through the reading process and this process enables students to link the ideas and facts in the text with their facts Realism in everyday life.

5- The third letter (R) is taken from the word (Recite), which means hearing, where each student list the answers to the questions he asked himself, individually.

6- The fourth (R) letter is taken from the word (review), which means review, that is, reviewing the academic topic as a whole and collecting the main facts collectively while displaying some of the previously asked questions and answering them under the supervision of the teacher.

Through the presentation of the previous steps, it is clear that this strategy depends on three basic rules to activate the memory, namely:

A- Examine and read the readable material.

B - Exercise on retrieval, and this leads the student to collect the elements of the written article when reading it in organized ways that achieve positive trends in the stabilization of the information (Tibi and others, 2009, p. 181)

#### **(PQ4R) III // The educational importance of a strategy**

The importance is reflected in the following points: -

1- It helps students to memorize and recall information and activate their previous knowledge, and establishes to discover the relationships and links between new knowledge and previous knowledge.

2- It makes them more able to awareness and organize new information, and facilitates its transfer from short-term memory to long-term memory.

3- It helps in developing some skills that improve their reading comprehension.

4- It increases their ability to produce questions related to a specific topic.

. (Atiyah, 2010, p. 161)

The role of teacher and student in implementing the PQ4R strategy

#### **First: The role of the teacher is as follows:**

1 - Plan the lesson objectives and define the initial knowledge and skills students need.

2- Explain the steps of the strategy and organize its presentation in a logical sequence.

3- Encouraging students to submit ideas, provide initial solutions, and provide them with open-ended questions.

4 - Urging students to engage students in improving their ideas to reach the final solutions.

(El-Sherbiny and El-Tanawy, 2006, p. 90)The second topic: previous studies, first: Iraqi studies

- A strange study (the effect of (PQ4R) strategy on reading comprehension among literary fifth graders)

Secondly: Arabic studies Al-Ghamdi's study: (The effectiveness of some self-questioning strategies and **(PQ4R) in developing reading comprehension skills for first-year high school students**)

Fifth: Aspects of benefit from previous studies: -

1- Determine the aim of the research. 2- Adopt an experimental design appropriate to the current research conditions. 3- Determine the sample size and the method of its selection.

4- Choosing statistical means appropriate to the nature of the current research. 5- Analyzing and interpreting the results of the current research. 6- Viewing the relevant sources

Chapter Three: Research Methodology and Procedures: First: Research Methodology:

The researcher followed the experimental method in the procedures for his research because it is the right approach with the nature of this research to achieve the goal of his research, and that the scientific method, which aims to achieve the hypothesis suggests the possibility of a relationship between two variables callers to the phenomenon of the assumption that one effect of variables an increase or decrease the other variable, as the seeker begins by observing In fact, the hypotheses are created and achieved through experience, to arrive at the relationship between the threshold and the Haitian phenomena, 2011, p. 27) In the experimental method, there is an independent variable, which is Reason and there is a dependent variable is a result. (Mahjoub, 2002, p. 82)

**Methodology and Results**

Experimental design: The choice of experimental design is the most important step for the researcher in undertaking a scientific experiment. The safety and correctness of the design is the basic guarantee for reaching reliable results. (Al-Zobaie and Al-Ghanam, 1981, pp. 94-95)

It refers to the part that summarizes the logical structure of the experiment. It includes an explanation of the variables in the study, the number of examiners, how they are divided into groups, and adjusting the variables that are related. (Al-Kubaisi, 2011, p. 66)

Therefore, the researcher relied on experimental design with partial control consisting of an experimental group exposed to the independent variable (PQ4R strategy), and a study is studied according to the traditional method and the achievement test and Figure (1) illustrates this:

Figure (1): Experimental design of the research sample

Dependent variable	Dependent variable	Independent variable	the group
Achievement test	Academic achievement	strategy PQ4R	Experimental
		traditional way	Control

The research community and its sample: - The process of selecting and specifying the research community requires following the scientific steps when the research sample is representative of the community of origin, it is possible to generalize the results of the research. (Al-Tamimi, 2009, 99), as the research sample is: “The part that represents the community of origin or model in which the researcher conducts the overall and the focus of his work.” (Wajiha, 164: 2002). Therefore, the researcher intentionally chose a medium (Martyr Qasim Tarish) for boys in Ali Sharqi district, affiliated to the Maysan Education Directorate for the following reasons:

- A- The cooperation of the school administration and its teachers and the facilities provided for conducting the research experiment.
- B- The school contains two middle-class divisions, which made it easier for the researcher to experiment according to the experimental curriculum
- C- Most of the school students are from a single geographical area, that is, from a converging environment, socially, economically, and culturally,

The second branch (b) was randomly chosen to be the experimental group that was studied according to the PQ4R strategy, and the second branch (a) to be the control group that was studied by the Facilitator of the College in the same way as the original method Appendix (1), the number of members of the two research groups reached (60) students in each group (30) students after excluding the students who failed and the number (11) students from the two groups, and table (2) shows that:

Table

(2): Distribution of the individuals of the research sample by people, groups, and variables

Number of students after exclusion	The number of students who failed	Number of students before exclusion	Independent variable	Groups	Division
30	6	36	strategyPQ4R	Experimental	B

30	5	35	traditional way	Control	A
60	11	71	2	2	Total

**3- Equivalence of the two research groups:** The researcher was keen, before embarking on the experiment, to be statistically equal to the students of the two research groups in some variables that may affect the integrity of the experiment and the accuracy of its results, and these variables are:

1. The student's age is calculated in months.
2. Academic achievement of parents.
3. Academic achievement of mothers.
4. Arabic language grades for the previous academic year.

The researcher obtained the data of the aforementioned variables, from the records of the school administration with the assistance of the administration, and the students themselves through a form prepared for this purpose and distributed among them, and below comes an explanation of the statistical equivalence processes in the variables between the two groups Experimental and control research:

A- **The chronological age calculated by the months:** The researcher performed a statistical equivalence in the chronological age of the students calculated by the months, and by adopting the T-Test for two independent samples to know the differences between the two average groups. (Appendix 2) shows that, when calculating the average age of the students of the two research groups, the average age of the experimental group (177.56), the mean age of the control group (180.50) and table (3) shows that:

**Table No. (3): T-test time value for students of the two experimental groups**

Significance level	T value		Degree of freedom	standard deviation	Average average	Number of individuals in the sample	the group
	Tabular	Calculated					
Not statistically significant	2.21	0.849	58	13.07	177.56	30	Experimental
				13.75	180.50	30	Control

Since the calculated T value was (-0.847) less than the tabular T value of (2,021) at a free degree (58) and the significance level (0.05), this means the absence of a difference between the two groups.

T - Academic Achievement of Parents: The researcher obtained data on the academic achievement of parents from two sources

1- School card.

2- The students themselves through a form distributed to them to verify the information in the card, as in (Appendix 3).

The researcher rewarded the two research groups statistically in the academic achievement of parents, as the results of the data using the square (Ka2) showed that the two groups are equivalent, as the calculated value reached (0,426) which is less than the tabular value of (7,815) and as shown in Table No. (4):

Table No. (4) repetitions of academic achievement for parents of students of research groups and calculated (Ka2) values and tabulation

Significance level	Ka value of 2		Degree of freedom	Bachelor and above	preparatory	Medium	Primary and below	Sample volume	the group
	Tabular	Calculated							
0.05									

Not statistically significant	7.815	0.426	3	11	8	6	6	30	Experimental
				9	9	5	7	30	Control

W - Academic Achievement of Mothers: The researcher rewarded the two research groups statistically for the academic achievement of mothers, as the results of the data using a square (Ka<sup>2</sup>) showed that the two groups are equivalent, as the calculated value reached (0.575) which is less than the tabular value of (7.815) and as shown in Table No. (5):

Table No. (5) repetitions of the educational achievement of mothers, research groups, and calculated (Ka<sup>2</sup>) values and tabulations

Significance level	Ka value of 2		Degree of freedom	Bachelor and above	preparatory	Medium	Primary and below	Sample volume	the group
	Tabular	Calculated							
Not statistically significant	7.815	0.575	3	8	9	8	6	30	Experimental
				10	7	7	5	30	Control

C- Students 'grades for the Arabic language for the previous academic year: The researcher obtained grades for each student from the research sample from school records (Appendix 4). The researcher rewarded the grades of students of the Arabic language subjects for the previous academic year using the T-test for two independent samples To find out the significance of the statistical differences, it was found that the calculated T value (64.96), which is less than the tabular value (2,005) at a free temperature (58), and this means that there is no statistically significant difference between the degrees of the two groups of (0,00) with 0 (0) for 0 groups. The two groups are equivalent Variable academic achievement of the

Arabic language in the year before the year for the year 2016-2017 as shown in Table 6:

Table No. (6) T-value (patronage and polemical) for students of research group degrees in Arabic language for the previous academic year (2016-2017)

Significance level	T value		degree of freedom	standard deviation	Average arithmetic	Number of female students	the group
	Tabular	Calculated					
Not statistically significant	2.021	0.849	58	14.55	64.96	30	Experimental
				15.48	59.26	30	Control

4- **Controlling the exotic variables:** the certainty of the service, the territorial integrity, this initiation should be although the changes you make are recognized despite the changes you make despite their commitment to the pilot program () Raouf, 2001, p. 158 - 159), such as the period the decision spent in Abramraa with the possibility of in the two research groups, in four variables, their interference may have a joint effect with the independent variable in the dependent variable, and then its results and the following are the procedures for controlling the factors affecting the internal integrity of the research:

**A- experiment conditions and accidents associated with:** refers to accidents associated with natural accidents that may occur in the course of the experiment (floods, hurricanes, disasters, accidents and other wars and other), hampering its progress and impact on the variable side effect of the independent variable, and the current study exposed to such obstacles So there was no effect on the results of the research.

**B- Experimental Depression:** Experimental depreciation means the effect generated by the abandonment or interruption of several experimental (research sample) students subject to interruption or leaving an impact on the results. (Al-Zobaie et al., 1981, 98)

The research did not address these cases except for the official holidays and the cases of individual absence that were exposed to the two groups almost equally.

**C- Maturity-related processes:** means the processes of change to which the experimenter is subjected to the effect of time and includes age progression and the researcher believes that these operations did not have an impact on the experience/sum of the test, then the sum of the test/aggregation, since then 2018 and ended on Tuesday 30/4/2018, and if there is growth in the psychological and biological aspects, this growth may offend the students of the experimental and the control groups.

**(D) the differences in the selection of two groups:** I tried the researcher as much as possible to avoid the impact of this variable by performing parity statistical between the two sets of experimental students and control group in four variables are: chronological age calculated for students months and academic achievement for parents of students research, and degrees of Arabic language material the previous year, which Their interaction with the independent variable can affect the dependent variable, in addition to this homogeneity of the sample members in social, cultural, and economic aspects. You belong to one social environment.

**E- The Measurement Tool:** The researcher used one measuring tool, which is (the achievement test), for both groups to measure the change in the level of students 'achievement in reading material and texts, and extract the truth and stability.

**F- The effect of the experimental procedures:** The researcher tried to control some conditions that could affect the safety of the experiment, the most important of which are:

**1- Research Confidentiality:** The researcher is keen on confidentiality of the research, in agreement with the school administration, not to inform students about the nature of the research and its purpose, so that their activity or interaction with the experiment does not change, which may affect safety and effect.

**2- Instructional means:** The researcher used common educational means (blackboard and colored pens) with the two research groups.

**3- Duration of the experiment:** The trial period was one and equal for the two research groups, as it started on Tuesday corresponding to 2/19/2018 and ended on Tuesday, 4/30/2018.

**4- The experimenter:** The researcher studied the two research groups (experimental and controlling) to ensure that this factor does not affect the results of the experiment and the accuracy this experiment adds to the compilation results from the compilation of the experiment. Attributable to the independent variable, part of the difference may be attributed to the ability or adequacy of one teacher more than the other, his or her personal quality, or other factors.

**5- Distribution of classes:** The researcher studied two lessons per week in the subject matter, taking into account parity in lessons so that the educational effort is made and students receive the lesson equally,

and Table (7) shows that:

the clock	the lesson	the group	Today
8.00	the first	Experimental	Tuesday
8.45	The second	Control	





classification), the classification (the classification), the classification (the classification), the (classification), the classification (the classification), and the classification (the classification), the classification (the classification), the classification (Alvlmh), and the classification (Alvlmvm) classification These objectives were presented to a number of arbitrators and experts in the Arabic language and the methods of their teaching (Annex 6).

**3- Preparing the teaching plan:** The teaching plan is defined as the system that the teacher follows in what he teaches students, and the skills and activities they obtain to gain useful experience and necessary skills, and the different information from the field in the field. Et al., 2000, p. 4). Since the teaching plans were one of the requirements of the successful teacher, the researcher prepared educational plans and the researcher presented samples of these plans to a group of experts and specialists in the Arabic language. Clear teaching (Appendix 8) to solicit their views and observations to improve the wording of those plans and make it sound to ensure the success of the experiment.

Therefore, the researcher prepared (18) a teaching plan (9) of which for the experimental group that dealt with the strategy (PQ4R), and (9) of them for the group according to the steps of the method used in schools within the field of research in the field of research, in the area of the research, The researcher presented two sample plans to a group of arbitrators and experts in the specialization of language education and teaching methods, (Appendix 6) and in the light of their opinions and suggestions, some modifications were made and its form (8).

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**Sixth: Research tools: First: the achievement test:** The achievement test is an organized tool for determining the level of students 'achievement of information and skills in a study subject previously learned through their response to a sample of paragraphs that fall within the content of the subject matter. (Odeh, 1998 AD: p. 52) The exam is an essential part of the measurement and evaluation programs that the teacher uses in the classroom to learn about the types of learning. (Abd, 1983 AD: p. 15). As the researcher prepared an achievement test for the two research groups according to the levels of Bloom's classification for the cognitive domain (knowledge, understanding, application, analysis, composition) to determine the difference between the control and experimental groups and identify their levels, the researcher prepared a component test. Of (20) items as an achievement test distributed among six units as shown in Appendix (9), and he took into account the following steps when preparing it.

**A- Determination of the scientific subject:** The scientific subject was determined to the second intermediate grade students, which included the subjects in six units, the first unit (will from dying), the second unit (whichever is more complete), the third unit (a success story), the fourth unit (the spring), The fifth unit (Jaber bin Hayyan), the sixth unit (the will to live).

**B - Preparing the specifications table:** It is a table that links the goals to the content and the extent of achieving the behavioral goals of the material in a specific way, meaning that it measures the extent of the investigation to the sincerity of the content represented by two basic elements, comprehensiveness, and representation. The test paragraphs are truly representative of the content sample. (Majeed, 2007 AD, p. 23). Based on the foregoing, the researcher prepared the specifications table for the content of the units (first, second, third, fourth, fifth, and sixth), from the book of reading and texts for the second-grade average according to Bloom's classification (knowledge, understanding, application, analysis Syntax) within the cognitive domain as in Table (9) shows that

Table (9): Table of specifications for the achievement test

Total %100	Behavioral goals					Weight Unit	Unit
	Installation %8	Analyzing %22	Application %30	Understanding %15	Knowledge %25		
3	0	1	1	0	1	%15	the first unit

3	0	1	1	0	1	%12	The second unit
3	0	1	1	0	1	%12	The third unit
3	0	1	1	0	1	%15	The fourth unit
3	0	1	1	0	1	%18	Fifth unit
5	0	1	2	1	1	%28	The sixth unit
20	0	6	7	1	6	%100	Total

Subject content weights were calculated in light of the number of pages of the topic as follows:

- 1- **Determine the weight** of the content for each specific subject according to the following relationship:

$$\frac{\text{Number of behavioral goals} \times 100}{\text{Total number of targets}}$$

- 2- Determine the weight of the behavioral goal in each behavioral level according to the following relationship:

$$\text{Content Weight per Subject} = \frac{\text{The number of behavioral goals for each chapter}}{\text{Total number of targets}}$$

The number of questions for each cell = the weight of each chapter x the weight of each level x the number of paragraphs and the number of periods has been determined and is

(20) Test block (Al-Dhahir, 1999 AD, pp. 83-83).

C- Formulation of test items: Based on what was stated in the specifications table, test items were formulated and instructions were prepared. The researcher developed (20) multiple test items and explains with a solved example to students and asked students to read carefully the test items and not leave any paragraph unanswered because it will be prepared Secondly - logical analysis: - A good test is what measures what was prepared to measure it, and this is called honesty, that is, it measures the job that was prepared to measure it and does not measure anything different, and if the truthfulness of each question depends on the extent of its measurement of the area that was supposed to be measured. To verify the validity of the test and to achieve the objectives J has designed the researcher found that the sincerity of the content is the degree to which the test measures the content of a particular topic. (Al-Imam, 1990, 49). In the light of the research procedures, the two researchers prepared the test map and presented the paragraphs, behavioral goals and the content of the study material to a group of experts to verify the validity of the test content and (9) clarify the achievement test paragraphs in its final form.

**Third - The exploratory application of the test:** To reveal the clarity of the test instructions and the clarity of its paragraphs to formulate it and the time is taken to answer the test, the researcher applied the experiment on 12/4/2018 to an exploratory sample consisting of (50) students in the second grade medium from the martyr Qasim Tarsh's medium During the researcher's supervision of the application, he found the test items were understandable, and the instructions for answering are clear, and the average time taken by students to answer the test was (45) minutes.

Fourth - Correcting the test: The researcher assigned grades to correct the objective paragraphs, so there was one score for each correct answer and zero for every wrong answer, and the abandoned paragraphs are treated as the wrong answer, and the total number of students' scores on the test questions is (20) degrees

**Fifth - Statistical analysis of the paragraphs:** The test items were analyzed and the goal was for this so that the researcher can explain the results obtained from the members of the sample, and he knows the validity of the instrument's paragraphs and their achievement of the goals (Ghubari and Abu Shuaira 2010, 3, 2010)

The following is an explanation of the procedures for the statistical analysis of test items. A- Difficulty Factor: The difficulty level of a paragraph indicates the percentage of correct answers to the paragraph. (Al-Dhahir, 1999, p. 128) The purpose of calculating the difficulty of a paragraph is to indicate the extent of this difficulty that makes its difficulty appropriate to the situation to be measured since the very difficult paragraphs are very difficult or not very attractive. (Al-Zobaie et al., 1981, p. 77), Calculated the difficulty of each of the test items, it became clear that they ranged between (0.25-0.74), and (Bloom) believes that the good test items differ in the level of their difficulty between (0.20) and (0.80) tests, and All fall below the acceptable level (Appendix 12). Bloom, 1971,66)

B- The ease factor for the paragraph: the ease factor for the paragraph means the proportion of students who answered correctly to the paragraph, and the researcher found that the ease factor ranges between (0.26 - 0.26) and this is the level of (12) in the level of the content. (Al-Azzawi, 2008, p. 81)

**C- The discriminatory strength of a paragraph:** the discriminatory power of a paragraph means its ability to distinguish between students who obtain high grades and between students who get low grades in the low value in the measured feature. (Al-lāhir, 129,1999)

After the researcher calculated the strength of distinguishing each of the test items, it was found that they ranged between (0.04-0.46). This means that the test items are different, so paragraphs less than (0,20) were excluded and the paragraph of (0,20-0) was modified. , 39) and retain the paragraph from (0,40) and above as per Appendix (12).

**D- Effectiveness of incorrect alternatives:** The test items from multiple contain the alternative, and the alternatives are supposed to be effective in misleading the weak students in terms of education. There is no benefit from an alternative that is missed by all or known by all, depending on the difference in the age of the problem. The study's non-subject subject is distracted from the correct answer, so a good alternative is that alternative that attracts many students from the lower group higher than the students of the higher group and vice versa. Replacement is no longer effective and should be deleted. (Al-Chalabi, 2005, p. 75). After calculating the effectiveness of the incorrect alternatives for the test items, it appears that they ranged between (0.02-0,24) (Appendix 13). Test stability: The test is constant if it is cyclical if any The ability of the test to give the same score to the researcher if it is reapplied to the same groups themselves (Mahjoub, 2002, p. 204).

There are several methods for calculating the stability of the test, and one method has been used, which is the coefficient of Quder\_20 to calculate the stability and the stability was (0,65) and that the stability is acceptable if it is the amount (0,20 - 0,80). As in (Appendix 14). (Nunnaaly, 1987: 182) .Application of the experiment: the researcher applied the experiment to the members of the sample during the second semester starting on February 19, 2018. The researcher rewarded the two research groups, and the researcher explained the method he would use in teaching and explained to the experimental group students that they would study a strategy (PQ4R) and introduced them to the strategic steps, after which the researcher applied the experiment and after completing the experiment, the researcher applied the achievement test on the date of the reconnaissance sample 12/4/2017 and then applied the achievement test in its final image 4/26/2017.

**Seventh / Statistical Methods:** The researchers used statistical methods according to the requirements of the current research, which are as follows:

First: T-test for two independent and equal samples Use to know the significance of the difference between the average scores of students for the two groups (experimental and control) in the final achievement test.  $T =$

$$\frac{x_1 - x_2}{\sqrt{\frac{((n_1-1)s_1^2 + (n_2-1)s_2^2) \left(\frac{1}{n_1} + \frac{1}{n_2}\right)}{n_1 + n_2 - 2}}}$$

T-test.

$x_1$ : Average of the first group.  $x_2$ : Average of the second group.  $n_1$ : The number of members of the first group.  $n_2$ : the number of group members for a second.

$S_1^2$ : Variation of Group I.  $S_2^2$ : Variation of Group 2. (Al-Bayati, 1977, p. 260)

Second: The Kay square (Ka2): It is used in the equivalence of the two research groups in the academic achievement of parents.

$(L-S)^2$

S

It represents:

(L) - observed repetition

(S) - Expected repetition (Dennis, 2000, 147)

Third: Paragraph difficulty equation to calculate the difficulty of achievement test paragraphs: -

$$s = \frac{D+KH}{K}$$

whereas

Y: represents the coefficient of difficulty. GZ represents the number of wrong answers in the higher group. GD represents the number of wrong answers in the lower group. K: represents the number of students who tried to answer. (Melhem, 2000, 234)

Fourth: Paragraph discrimination equation. To calculate the powers of distinguishing achievement test items: whereas Y: represents the coefficient of difficulty. GZ represents the number of wrong answers in the higher group. GD represents the number of wrong answers in the lower group. K: represents the number of students who tried to answer. (Melhem, 2000, 234)

Fourth: Paragraph discrimination equation. To calculate the powers of distinguishing achievement test items:

$$\frac{D + \epsilon H}{K}$$

YY represents the number of correct answers in the top group.

AM represents the number of correct answers in the lower group.

N: represents the number of students in one of the two groups. (Al-Mahasneh and Abdel-Hakim, 2013: 207)

Fifth: The equation of the effectiveness of wrong alternatives: This method was used to know the effectiveness of incorrect alternatives for the achievement test.

NADM - NDM

$$P = \frac{\text{NADM} - \text{NDM}}{N}$$

It represents:

NMM: the number of students who chose the alternative from the upper group. NAD: the number of students who chose the alternative from the lower group.

N: The number of students in one of the two groups. (Abu Fouda and Najati, 2012, 123) Sixth: Coefficient of ease: found by law (1 - difficulty) for each paragraph of the seventh.

Use to calculate the stability coefficient for the achievement test.  $(\sum pq) / S^2 - 1$  KP20 = N / (N-1)

Whereas: KP20: Stability of the total test .N: Number of test items. Qpq: Total (Ratio of Correct Answers x Ratio of Wrong Answers). (Back, 1993, p. 356)

Eighth: The statistical bag was used SPSS IX: The Arab processor was used in the statistics APSS

#### **Chapter Four Presentation and interpretation of results Presentation and interpretation of results**

**First: Presenting the results:** After applying the achievement test on the students of the two research groups on Thursday 26/4/2018, and correcting their answers, to ensure the validity of the research hypothesis, which states that there is no statistically significant difference at the level of significance (0.05) Between the average score of the students of the experimental group who studied the reading subject and the texts using the Toms and Robinson strategy (PQ4R), and the average score of the students of the control group who traditionally studied the same material. The test results were subjected to statistical analysis, and the mean and standard deviation of the scores of the students of the two research groups (experimental and control) were extracted. Using the T-Test for two independent samples, the calculated T value was found, and it was found that there was a statistically significant difference at the level of significance (0.05) And the degree of freedom (58) in favor of the experimental group that studied the independent variable Toms and Robinson strategy (PQ4R), as the calculated T value reached (6,863) which is greater than the tabular T value of (2,021) as shown in Table (10).

**Table (10) Results of the T-test for the two groups in the post-test**

**Second: Interpretation of the results:** The results of the hypothesis of the superiority of the experimental group

Statistical significance at the level of 0.05	Degree of freedom	T value		standard deviation	The average Arithmetic	the number	the group
		Tabular	Calculated				
Statistically significant	58	2.021	6.863	1.94	17.40	60	Experimental
				2.89	13.03	60	Control

students who studied according to the strategy (PQ4R) showed that the control group students who studied according to the standard method are believed to be according to the standard method: Strategy (PQ4R), improved reading and understanding and facilitated access to previous knowledge and expanded learning and skills transfer process, and I returned students to be more able to distinguish and read and retain information as these steps strategy sequential and sequential represented by (reading the introductory theme, ask questions, read the text, Altom- 1, and the formation of perceptions and ideas on the subject or recitations aloud, and then review), which led to Increased academic achievement in reading and texts. Asserts (Mohsen, 2009), that "this strategy is working to help students to save the information and Astzkarha active prior knowledge and establish to discover relationships and links between new knowledge to make students more capable of awareness in the organization of the new information, and improved understanding of reading and increase students' ability to Produce different questions about the topics they are taught "(Mohsen, 2012, 2009)

2- The (PQ4R) strategy helped to develop different and diversified study skills, such as researching, organizing, processing, displaying and discussing collections, on a group basis.

3. **The strategy worked (PQ4R)** on the organization of the educational content of the subjects studied showed the meanings and relationships between concepts and terminology, and made them more sensual and easy perception and

linking new knowledge with prior knowledge of the students and this is what to make learning meaningful, and this has been confirmed by the results of Almadīh tests in this research .4 **Teaching subjects to read the strategy (PQ4R)** participates in increasing the student's motivation towards learning and helping them to participate actively in learning. RS.5 - **Teaching with a strategy (PQ4R)** increased the student's awareness of himself, and of the processes of reading in the text, and improved his learning.

6- **Teaching with a strategy (PQ4R)** helped students develop listening skills and accept the opinions of classmates. Conclusions, recommendations, and proposals.

## Conclusion

: In light of the result of the current research, the researcher was able to conclude the following:

- 1- The teaching of reading subjects and texts by the strategy (PQ4R) contributed actively to raising the achievement of the second intermediate grade students in reading and texts.
  2. The strategy (PQ4R)) made the learning environment of classroom environment characterized by dynamic, vigorous and serious and interactive as between the teacher and his students, where the process is the focus of education instead made the student from being a recipient of a negative, prompting the students of the experimental group to enjoy their lessons according to strategy (PQ4R).
  3. The strategy (PQ4R) and what is contained in the sequential and sequential organization steps, leading to mental and emotional interaction, which walked the students of the experimental group who studied according to the success of this strategy is to raise the level of achievement in reading material and texts.
  - 4- Using the TQS and Robinson strategy (PQ4R) in teaching activates previous knowledge and generates excitement, motivation, and suspense for the lesson, which increases students' academic achievement.
  - 5- Adoption of this strategy enabled students to generate questions and ask during the lesson.
- 6- The adoption of this strategy enabled students to be able to link their previous information with the new information they obtained.

**Second: Recommendations:** 1- The necessity to include the curricula of a school preparation program in the colleges of basic education for modern strategies and methods of teaching such as metacognitive strategies, including Tums and Robinson (PQ4R).

- 2- Adopting a strategy (PQ4R) in teaching reading and texts for the second intermediate class.
  - 3- Encouraging Arabic language teachers and other subjects to adopt a teaching strategy (PQ4R), because it enables students to use their skills to direct thinking and learning processes.
  - 4- Taking into account the correct steps by the teacher when using the TQS and Robinson strategy (PQ4R) and accustoming the students to that since the beginning of the semester, and this will be the general objectives that are reached to reach and achieve them through the daily lessons of the subject.
  - 5- Opening training courses for Arabic language teachers during service on how to use metacognitive strategies and skills in teaching, given their importance in communicating information, skills, facts, and concepts clearly to students and developing their scientific thinking.
  - 6- Caring for teaching reading material based on a comprehensive change like understanding of reading processes and their functions in the present and future life of students, and not limiting themselves to the mechanical concept of reading.
- 7- Focusing on teaching reading and texts in the intermediate and preparatory levels for what neglected by teachers and not giving it importance and making time for her class to teach the rules or rest.

**Third: Proposals:** In light of the current research result, and as a supplement to it, the researcher suggests conducting the following studies:

- 1- Conducting a similar study to the current study in other academic stages such as preparatory and teacher institutes.
  - 2- Conducting a similar study in reading and text material aimed at identifying the impact of using the PQ4R strategy in creative thinking, critical thinking, acquisition of concepts, and direction towards the material.
  - 3- Conducting a descriptive evaluation study (evaluating the performance of students applied in practicing metacognitive skills from supervisors).
  - 4- Conducting a comparative study between the TQS and Robinson strategy (PQ4R) and one of the other metacognitive strategies in obtaining reading material and texts.
- 5- Conducting a similar study to the current study on students

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