Indian Journal of Information Sources and Services
ISSN: 2231-6094 (P) Vol.15, No.4, 2025, pp.275-281

DOI: https://doi.org/10.51983/ijiss-2025.IJISS.15.4.31

The Effect of the PQRST Strategy on Improving Ninth-Grade Female Students' Reading Comprehension Skills

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(Received 27 August 2025; Revised 14 October 2025, Accepted 28 October 2025; Available online 15 December 2025)

Abstract - **The purpose of this study was to confirm whether the "PQRST" technique improved the reading comprehension skills of female ninth-grade pupils. In order to accomplish this, the researcher created a calculated exam consisting of two item types: ten essay questions and thirty multiple-choice question objective items. The test was designed to assess the participants' performance in relation to the literal, interpretive, and critical reading comprehension levels. Sixtyone female ninthgrade students from the Custodian of the Two Holy Mosques mixed high school were specially chosen to comprise the study sample during the second semester of the academic year 2024/2025 AD. They were divided into two groups. The experimental group, which included 31 female students taught the "PQRST" technique, was selected at random, and the control group, which included 30 female students taught the conventional strategy, was the other group. The results of the study demonstrated that the experimental group outperformed the other study groups in terms of raising reading comprehension levels, both individually and collectively. Because of its impact on raising reading comprehension levels, the study suggested that Arabic language instructors be encouraged to employ the "PQRST" technique while instructing reading.**

Keywords: **Strategy, PQRST, Reading Comprehension**

I. Study Background and Importance

Introduction

Reading is an educational necessity for students to fulfill in order to express their thoughts and convey their ideas, since it is the insight of human knowledge and a means to transfer human heritage and exchange ideas between individuals and groups, transcending time and geography (Geng, 2024; Ashour & Moqdadi, 2013). However, reading does not achieve its goals if the learner did not have the skills of reading comprehension, as it is not enough for the student to read the text to absorb his superficial meanings, but rather he must possess mental tools that enable him to analyze, infer, interpret, and link between ideas and deduce their deeper meanings. Without these skills, reading remains a formal process that does not lead to real learning or the ability to interact with texts in a conscious and insightful manner. Therefore, improving reading comprehension skills is not the issue of developing an individual ability, but rather an educational necessity imposed by the requirements of active learning in various fields (Paz & Coutinho, 2022; Galarza et al., 2024).

(Al-Olaimat & Hammoud, 2011) indicated that the true factor that determines the value of reading and its importance is the amount of reading comprehension (Rumelhart, 2017). According to (Amayra & Abdullah, 2016), The definition of reading comprehension is: "The process of thinking in which the meanings of what has been read interact with the knowledge that the individual possesses, which leads the reader to new inferences and meanings that are incorporated into his previous knowledge, and therefore his knowledge deepens and his understanding increases". Al-Samman indicated that there are seven levels of reading comprehension, which are: direct understanding, interpretative, deductive, practical, critical, discourse, and creative.

The importance of reading comprehension is in the fact that it is the basis that supports learning in the following stages, as the academic progress of the student depends on their ability to understand what they read (Butle et al., 2010). As a result, the need to adopt an educational methodology based on well thought-out reading strategies that enhance reading comprehension skills is emphasized, such that reading is not limited to retrieving information, but rather extends to instilling critical thinking and deep interaction with texts (Sen & Malhotra, 2025; Gürbüz & İlik 2025; Nhlapo et al., 2025). This will be reflected in the development of students' academic performance, which gives them the ability to implement reading in areas broader than the limitations of the curriculum (Vaezzade & Alinia, 2014).

Several studies have shown a significant effect of the teaching strategies used within these studies compared to the traditional way in regards to developing reading comprehension skills. Among the most prominent strategies that showed positive results in this field are: DRTA, SQ3R, K.W.L, Receiving Theory, Creative Thinking, and PQRST.

The PQRST technique was the focus of the current study's researcher because of its integrated organization, which may contribute to a deep improvement in reading comprehension skills. It was developed by Francis Robinson in (1970) - a psychologist at Ohio State University, where he conducted tests on his students to measure the effect of this strategy in improving their level of performance, then it was presented for the first time as a strategy to improve reading comprehension and memorization by Stanton in (1982) to improve the performance of the memory and motivate the reader to address the results of understanding the content of reading materials more comprehensively (Zahedifard et al., 2015; Aulia, 2022; Wahono, 2017, as cited in Hermawan, 2025). Franze (1995) quoted from Robinson, who created the strategy, that: "PQRST provides a method for classifying information that is read and guides the topic in the organized exercise so that it can be saved in memory" (p.84).

The PQRST strategy is one of the strategies that can improve the reading comprehension of students (Thomas & Robinson, 1972). It depends on stimulating the previous knowledge of the student and active interactions with the text in a way that is in line with the cognitive theories of reading comprehension. For example, in the (Previewing) stage, the teacher distributes the reading text on his students, then directs them to determine the main ideas, so the student can skim the text quickly, which stimulates their previous experience to conclude the content of the general text (Yoode & Thanakong, 2024). This is a process supported by the (Schema Theory), in which Rumelhart (1980) sees that the reader depends on his previous cognitive structure to expect the content of the text and link it with his stored experiences (Veerappan, 2025; Franzen, 1995).

As for the second step, which is (Questioning) by stimulating critical thinking to keep their focus and enhance their comprehension of the material, students must develop a list of questions regarding the text's substance, so they formulate questions about the text, which stimulates their mental interaction and enhances their understanding (Hermawan, 2025). This is supported by (Piaget's Theory) which shows that investigative questions help build knowledge and enhance interactions with the content.

The third step, reading, involves pupils reading the entire book and looking for solutions to the questions they had before. In order to guide them toward the major ideas, students need to recall the components they observed in the first two steps, such as titles, special terms, images, and summaries.

In this step, students focus on the details as they are looking for answers to their questions (Pertiwi, 2021). This is related to the concept of interactive processing of the text, and it is also supported by the (Schema Theory), as (Yang, 2023) indicates that the Schema Theory considers the reading process as only the process where readers realize and process the materials they have read.

In the fourth step, which is (Summarizing) by rephrasing and clarifying, this is a continuous step to consolidate information, since students must summarize any important ideas, they encounter using their own words to understand and transfer them to long-term memory, which is the primary goal of reading. In this step, the smart reader may resort to use various assisting tools, such as: mind maps to remember ideas, as what is stored in the memory is useful when writing tests and assignments (mohaidat, 2018). According to (Widdowson, 1983), rearranging textual knowledge improves reading comprehension. This is also supported by the Mental Models Theory, which demonstrates that using this tool effectively improves reading comprehension, making it a fundamental teaching strategy (da Paz, 2022). The information is retrieved to confirm comprehension in the fifth phase, testing, which involves students assessing their reading comprehension by responding to the questions created in the strategy's second step (Yoode & Thanakong, 2024). This step is supported by (Carrell theory) (Carrell & Eisterhold, 1983) that sees that using the review technique to activate the Schema promotes memorization and deep understanding of the content.

The PQRST strategy was effective in boosting certain reading comprehension standards because it is relevant to the topics taught in regular classes and provides a method for classifying the read content and structuring review, which aids in memory retention. In addition to some of the long-term advantages of teaching this strategy, it is an effective way to increase reading comprehension (Frazen, 1995).

Previous Studies

Indahwati, 2020 conducted a study aimed at improving reading comprehension skills by implementing the PQRST strategy on eighth-grade students in Indonesia. The study used the procedural approach, and its tools were a MCQs test of (20) reading texts and note cards during the learning process; the strategy was applied to a sample which consisted of (32) students; the results of the study showed that the PQRST strategy is one of the best strategies implemented in learning the English language, especially in improving reading comprehension skills.

The (Pertiwi, 2021) study sought to ascertain whether there was a statistically significant difference in the reading comprehension levels of eighth-grade pupils in Ponorogo, Indonesia, who were taught the PQRST approach compared to those who were not. A sample of forty-six students, evenly divided into two groups an experimental group and a control group were given a test consisting of forty multiple-choice questions (MCQs), observation cards, and interviews as part of the study's quasi-experimental methodology. According to the study's findings, students who were taught using the PQRST strategy achieved greater degrees than those who were not, demonstrating the system's efficacy in teaching reading comprehension.

The study by Yusnial et al. (2024) sought to determine how the PQRST strategy affected Indonesian eighth-grade

students' reading comprehension abilities in the English language course (Yoodee & Thanakong, 2024). A sample of fifty-four students was divided evenly into two groups, an experimental group and a control group, and given a test with thirty multiple-choice questions. A quasi-experimental methodology was used in the investigation. The study's findings demonstrated that the PQRST technique has a beneficial impact on students' reading comprehension abilities, and that students' gains in these abilities increase with their level of motivation.

The goal of (Hermawan's, 2025) study was to find out how the SQ3R and PQRST strategies were used to help University of Silwanghi University students in Indonesia understand what they were reading. The descriptive approach was employed in the study, and a sample of five students was given the reading comprehension and evaluation scale. The study's findings demonstrated that both strategies were superior, but the PQRST strategy outperformed the other strategy in terms of mean values, indicating that it was more effective at raising students' reading comprehension.

Study Problem and Questions

- The researcher's study problem stems from her conviction that it is critical to help students develop their reading comprehension abilities. She is a teacher. The field notes revealed a clear deficiency in the female ninth-grade students' reading comprehension abilities, which restricts their capacity to engage constructively with the instructional materials. The PQRST strategy, which relies on methodical steps meant to stimulate students' active understanding and improve reading comprehension levels, is one of the effective teaching strategies that must be sought in order to improve these skills in female students (Zulfitriyani, 2021; Simaibang & Sari, 2021).
- The current study aims to ascertain the effects of the PQRST technique on the literal, interpretive, and critical reading comprehension skills of female ninth-grade students in Jordan. "Is there a statistically significant difference at ($\alpha = 0.05$) between both arithmetic means for the performance of the study members at each level of reading comprehension individually that is attributed to the teaching strategy (traditional, PQRST)?" is the specific question that the study seeks to answer. "Is there a statistically significant difference at ($\alpha = 0.05$) between both arithmetic means for the performance of the study members at each level of reading comprehension individually that is attributed to the strategy of teaching (traditional, PQRST)?"
- "There is no statistically significant difference at ($\alpha = 0.05$) between both arithmetic means for the performance of the study members at the (interpretative) level reading comprehension individually that is attributed to the teaching strategy (traditional, PQRST)," according to the second null hypothesis. "There is no statistically significant difference at ($\alpha = 0.05$) between both arithmetic means of the study members' performance at the (critical) level of reading comprehension individually that is attributed to the teaching strategy (traditional, PQRST)," according to the third null hypothesis.

The Study Significance

Theoretical Significance: It provides a scientific addition to the educational field by choosing a strategic that is rarely discussed in the local and Arab contexts, which enhances the theoretical understanding of reading comprehension levels: (literal, interpretative, critical).

Practical Significance

The study offers a workable approach for using the PQRST strategy in the classroom, assisting Arabic language instructors in using it as a useful tool to enhance students' reading comprehension abilities.

The Study Objectives: To determine how well ninthgrade female students' reading comprehension skills improved when using the PQRST strategy as opposed to the conventional approach.

Study Terms and Procedural Definitions

The study will include the following terms and definitions:

PQRST Strategy: (Ciaramelli et al., 2015) defined it as: a series of guidelines for reading that could help you better understand and comprehend the material you read and increase your retention of it. The researcher defines it procedurally as: A strategy that indicates five organized educational steps that will be applied to reading texts to improve reading comprehension skills and trends towards reading among ninth-grade female students, these steps include: Previewing, Questioning, Reading, Summarization, and Testing. This strategy is implemented within an organized class environment, and its effect on improving the performance of female students in the reading comprehension tests is measured according to specific criteria that include the literal, interpretative, and critical levels of reading comprehension.

Reading Comprehension: "The outcome of what the reader absorbs and the knowledge and facts that he deducts based on his background knowledge" (Al-Tal & Moqdadi, 1989).

The researcher describes it methodically as follows: The ability of female ninth-grade students to comprehend readable materials across the three reading comprehension levels, beginning with the (literal) level, which entails defining the text's basic idea or incomplete ideas, mentioning details and facts and determining the apparent meanings of

the vocabulary and structures contained in it; then the (interpretative) level which requires interpreting the values to which the text aims, the link between the cause and the result, the purpose of the writer from the text, and understanding the metaphorical language included in it; then the (critical) level that includes evaluating the validity and accuracy of information, judging the text in light of previous experience, expressing an opinion on the adequacy of the evidence presented, and distinguishing between opinion and fact. In this study, all of the above is measured by the score that the ninth-grade female student obtains on the reading comprehension skills test that will be prepared for the purposes of this study.

Study Limits and Determinants

Limits

The objective limit: The study was limited to reading lessons from four units from the book of the Arabic language for the ninth-grade for the second semester, entitled: (Arabic proverbs), (Optimism and Hope), and (Compassion towards Animals). The time limit: The study was conducted in the second semester of the year 2024/2025. The spatial limit: The study was held at the Custodian of the Two Holy Mosques mixed high school under the first district of Al-Zarqaa.

The human limit: The study was conducted on (86) ninth-grade female students in the Custodian of the Two Holy Mosques mixed high school under the first district of Al-Zarqaa; (25) female students represented the survey sample, and (61) female students represented the experimental and the control groups equally.

Determinants: The conditions under which the study's participants are selected and its instruments are used determine the study's results; the method that will be authorized for the use of the study tool also determines the study's results; the generalization of the study's findings is reliant on the sincerity of the participants' responses to the study's items and the psychometric qualities (validity and reliability) of the instrument, so the validity of the tool used will limit how broadly the findings can be applied.

II. METHODS AND PROCEDURES

Study Methodology

Two groups of female ninth-grade students were chosen for this study's quasi-experimental design: an experimental group that received education using the "PQRST" technique, and a control group that received instruction using the conventional strategy. The survey group was chosen from the same school, which included twenty-five female students, under the Directorate of Education for the first district of Al-Zarqaa during the second semester of the academic year 2024/2025 AD. The members of both groups, which consisted of sixty-one ninth-grade female students from the Custodian of the Two Holy Mosques mixed high school, were given reading comprehension pre- and post-tests. The experimental class, which included 31 female students who were instructed using the "PQRST" strategy, and the control class, which included 30 female students who were instructed using the traditional method, were the two courses to which the study participants were randomly allocated. Because it was near the researcher's workplace and provided the resources and facilities needed for the study procedures, the school was chosen in the traditional way.

Study Tool

Reading comprehension skills test: The researcher prepared a test - pre and post - of both essay and MCQ items to achieve the goals of the study; the test measures reading comprehension skills at the: literal, interpretative, and critical levels, and included (40) items, of which (10) items were essay items, and (30) of which were MCQ items, related to a reading text appropriate to the age of the study members. The MCQ items included four choices for each item, and the students were asked to choose the correct answer from these choices after reading the text. The researcher implemented the following procedures in preparing the test:

- Reviewing the literature related to reading comprehension skills.
- Referring to the general framework of the Arabic language curriculum: standards, outcomes, and performance indicators; reviewing the sub-skills of reading comprehension at the: literal, interpretative, and critical levels.

Validity of the Reading Comprehension Test

The test's apparent validity for its levels was established by presenting its initial version to a panel of arbitrators who were knowledgeable in the following fields: the Arabic language and its literature, the Arabic language and its teaching methods, measurement, and evaluation in Jordanian universities, as well as the Arabic language supervisors and teachers in the Ministry of Education (Shehata et al., 2012; Odeh, 2010; Odeh & Ahmed Suleiman, 2014). They discussed their thoughts on the test in terms of the following: the test's instructions were clear; the topics were appropriate for the ninth grade; the topics were diverse; the linguistic formulation was sound; behavioral indicators were linked to reading comprehension levels; the correct criteria for correction were accurate; and the answers model was accurate. In light of the arbitrators' views, the test was changed.

Implementing Study Procedures

The study was applied to the students of the experimental group in the second semester of the academic year 2024/2025, as (9) class sessions distributed over (3) weeks, amounting for (3) classes per week with follow-ups, and the duration of the class was (45) minutes, while the control group were taught according to the academic schedule prepared by the school administration.

The researcher followed a set of steps in implementing the "PQRST" strategy for ninth-grade female students to improve their reading comprehension skills as follows:

- Reviewing educational literature and previous studies related to the effect of PQRST strategy in improving reading comprehension skills.
- The tool was built in its initial form based on this review.
- It was confirmed by the validity and reliability of the tool, as the researcher will present it to the arbitrators with specialists, their opinions and notes that they agreed upon are taken, the tool was built in its final form, then the approval of the concerned parties was obtained accordingly.
- The tool was tested on a survey sample outside the study sample to identify the weak points and address them to make it ready to be applied to the study members as pre- and post-tests.

Study Results

"Is there a statistically significant difference at ($\alpha = 0.05$) between both arithmetic means for the performance of the study members at each level of reading comprehension individually that is attributed to the teaching strategy (traditional, PQRST)?" is the study question. This inquiry led to the following null hypotheses:

As per the first null hypothesis, "There is no statistically significant difference at ($\alpha = 0.05$) between both arithmetic means for the performance of the study members at the (literal) level of reading comprehension individually that is attributed to the teaching strategy (traditional, PQRST)". "There is no statistically significant difference at ($\alpha = 0.05$) between both arithmetic means for the performance of the study members at the (interpretative) level reading comprehension individually that is attributed to the teaching strategy (traditional, PQRST)" is the second null hypothesis.

"There is no statistically significant difference at ($\alpha = 0.05$) between both arithmetic means for the performance of the study members at the (critical) level of reading comprehension individually that is attributed to the teaching strategy (traditional, PQRST)," according to the third null hypothesis.

These are shown as follows:

Levels of Reading Comprehension Individually: Based on the teaching strategy, the arithmetic means and standard deviations of the study participants' performance on the pre-, post-, and adjusted post-test were determined for each reading comprehension level (literal, interpretative, and critical); Table I illustrates this.

TABLE I ARITHMETIC MEANS AND STANDARD DEVIATIONS FOR THE PERFORMANCE OF STUDY MEMBERS OF THE PRE-, POST- AND ADJUSTED POST-TEST AT EACH LEVEL OF READING COMPREHENSION, ACCORDING TO THE TEACHING STRATEGY

Skill	Teaching Strategy	Pre-test Performance		Post-test Performance		Adjusted Post-test Performance	
		Arithmetic Mean	Standard Deviation	Arithmetic Mean	Standard Deviation	Adjusted Arithmetic Mean	Standard Error
Literal	**Traditional**	9.33	4.82	13.08	2.76	13.09	0.49
	"PQRST"	9.52	4.54	17.66	2.58	17.65	0.48
Interpretive	**Traditional**	7.69	5.19	12.38	2.39	12.37	0.47
	" PQRST"	7.71	5.51	17.10	2.76	17.11	0.46
Critical	**Traditional**	6.53	4.10	10.45	2.46	10.44	0.53
	" PQRST"	6.49	4.57	15.71	3.23	15.72	0.52

Table II makes it evident that the experimental group's study members who were instructed using the "PQRST" strategy showed apparent differences in their pre- and post-test arithmetic means of performance as well as in the experimental and control groups' post-test arithmetic averages of performance. After balancing the differences in the pre-test arithmetic means of the performance of the study members of both groups at each of the reading comprehension levels, the accompanying analysis of multi-contrast variables was calculated, as shown in Table (II), to ascertain the statistical significance of the post-test apparent differences according to the teaching strategy.

The findings of the accompanying multi-contrast variable analysis for the study participants' arithmetic means of performance on the post-test at each reading comprehension level in accordance with the teaching approach are shown in Table II.

The following is observed when examining the contrast analysis results displayed in Table (II): − A statistically significant difference in at least one of the reading comprehension levels may be attributed to the teaching technique, as indicated by the Hotelling's Trace's statistical significance of 0.000, which is smaller than $\alpha = 0.05$. It was decided to reject the first null hypothesis and accept the alternative hypothesis, which states: "There is a statistically significant difference at ($\alpha = 0.05$) between both arithmetic means for the performance of the study members at the (literal) level of reading comprehension that is attributed to the teaching strategy." According to the teaching technique, the (literal) level's statistical significance value was 0.00000, which is less than 0.05.

TABLE II POST-TEST MEANS BY READING LEVEL AND TEACHING APPROACH

Source of Variance	Skill	Total of Squares	Degrees of Freedom	Mean of Squares	P Value	Statistical Significance	Effect Size
Accompanying (Pre-test Literal)	**Literal**	26.391	1	26.391	3.704		
	Interpretive	0.055	1	0.055	0.008		
	Critical	2.314	1	2.314	0.273		
Accompanying (Pre-test Interpretive)	**Literal**	0.978	1	0.978	0.137		
	Interpretive	0.302	1	0.302	0.046		
	Critical	2.970	1	2.970	0.350		
Accompanying (Pre-test Critical)	**Literal**	9.247	1	9.247	1.298		
	Interpretive	18.934	1	18.934	2.886		
	Critical	0.527	1	0.527	0.062		
Teaching Strategy Hotelling's Trace=3.070 Statistical Significance= 0.000*	**Literal**	316.859	1	316.859	***44.467***	***0.000***	***0.452***
	Interpretive	343.116	1	343.116	***52.301***	***0.000***	***0.492***
	Critical	424.996	1	424.996	***50.090***	***0.000***	***0.481***
Error	**Literal**	384.790	54	7.126			
	Interpretive	354.266	54	6.560			
	Critical	458.172	54	8.485			
Adjusted Total	**Literal**	**739.754**	**60**				
	Interpretive	**732.262**	**60**				
	Critical	**910.328**	**60**				

* Significant statistically at $\alpha = 0.05$

According to the arithmetic means shown in Table (I), there is a statistically significant difference in favor of the experimental group's performance. The (literal) level had a high effect size of 0.452 (Cohen, 1988). This indicates that 45.2% of the variation (improvement) in the post-test study participants' performance at the (literal) level may be attributed to the "PQRST" method. It was decided to reject the second null hypothesis and accept the alternative hypothesis, which states: "There is a statistical significance difference at ($\alpha = 0.05$) between both arithmetic means of the performance of the study members at the (interpretative) level of reading comprehension that is attributed to the strategy of teaching." According to the teaching strategy, the (interpretative) level's statistical significance value was 0.00000, which is less than 0.05.

According to the arithmetic means shown in Table (I), there was a statistically significant difference in the performance of the study participants in the experimental group that received instruction utilizing the "PQRST" technique. According to (Cohen, 1988), the (interpretative) level's effect size, which was 0.492, is large. This suggests that the use of the "PQRST" method accounts for 49.2% of the variation (improvement) in post-test study participants' performance at the (interpretative) level.

As a result of the teaching technique, the statistical value of significance at the (critical) level was (0,000) < (0,05), indicating the rejection of the third null hypothesis and the adoption of the alternative hypothesis, which asserts: The teaching approach is responsible for the statistically significant difference at 0.05 between the two mathematical measures of the participants' performance in the study of reading comprehension at the (critical) level (Cohen, 2013; Downing & Leong, 1982). It is clear from Table (I)'s arithmetic means that the research group's performance improved significantly when they were taught the PQRST approach, and the effect size, which was computed at the critical level and was (0.481), is substantial (Cohen, 1988). This demonstrates that the "PQRST" technique is responsible for 48.1% of the variance (improvement) in the research participants' performance following the post-test.

Examining the Findings, Suggestions, and Ideas

The high effect size suggests that the PQRST strategy's effectiveness in developing these skills can be directly attributed to at least half of the improvement on each of the reading comprehension levels (literal, interpretative, and critical).

The researcher also ascribes these outcomes to the PQRST strategy's exact stage-based design, which starts with the Previewing stage, which involves activating prior knowledge; the Questioning stage, which involves paying attention to details and strengthening implicit understanding; the Reading stage, which involves mental reconstruction and meaning evaluation; and the Summarizing and Testing stages, which conclude with mental reconstruction and meaning evaluation.

On a literal level, female students' awareness of explicit information, including names and dates, increased as a result of the questions' rapid examination, strengthening their ability to extract data effectively. Regarding the interpretative level, guided inquiries prompted them to go deeply into the context and produce fresh logical conclusions, enabling them to uncover the texts' hidden meanings. The Testing stage gave students the opportunity to analyze texts, use reasoning to weigh opposing viewpoints, and assess the texts' plausibility and logic in a way that improved their critical awareness.

These outcomes are in line with the research conducted by (Arabandari et al., 2022), which showed that the PQRST strategy was more successful than the conventional approach in raising the study participants' literal, interpretive, and

critical reading comprehension levels (Yusniar et al., 2024). This is explained by the way the method draws on past knowledge and encourages active engagement with the text, which helps to improve comprehension abilities at the literal, interpretive, and critical levels. Because the PQRST technique improves reading comprehension skills and students' reading habits, the researcher suggests that it be implemented in a variety of educational settings. Additionally, the researcher suggests confirming the degree of this effect and extrapolating its findings. Future research on the impact of the PQRST technique on additional Arabic language proficiency areas, including written expression, spelling and grammar, literary appreciation, and others, is also recommended by the study.

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