

Difficulties in Solving Verbal Mathematical Problems Among Primary School Students from Teachers' Perspectives : A Field Study in Tizi Ouzou.

صعوبات حل المسائل الرياضية اللفظية لدى تلاميذ المرحلة الابتدائية من وجهة نظر المعلمين: دراسة ميدانية في تيزي وزو.

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Abstract:

This study aimed to identify the main difficulties in solving verbal mathematical problems among elementary school students from the perspective of their teachers, as well as to reveal the level of these difficulties. To achieve this, a descriptive methodology was adopted, which is deemed most suitable for this study. Additionally, a questionnaire on the difficulties of solving verbal mathematical problems developed by the researcher Al-Shammari (2012) was utilized. The study was conducted on a sample of 71 elementary school teachers, randomly selected from various primary schools under the National Education Directorate of Tizi Ouzou Province. The results of this study showed that teachers differ in their identification of the difficulties faced by elementary school students in solving verbal mathematical problems. The results ranked the difficulties as follows: the first being difficulties in reading and understanding the verbal mathematical problem, followed by planning to solve the verbal mathematical problem in second place, and then difficulties in implementing the solution to the verbal mathematical problem in third place. The study also concluded that the level of difficulties in solving verbal mathematical problems among elementary school students, from the perspective of their teachers, is average.

Keywords: verbal mathematical problem, solving verbal mathematical problems, difficulties in solving verbal mathematical problems, elementary school students.

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الملخص: هدفت هذه الدراسة إلى التعرف على أهم الصعوبات في حل المسائل الرياضية اللفظية لدى تلاميذ المرحلة الابتدائية من وجهة نظر معلمهم، وكذلك الكشف عن مستوى هذه الصعوبات. ولتحقيق ذلك تم اعتماد المنهج الوصفي الذي يعتبر الأنسب لهذه الدراسة. كما تم استخدام استبانة حول صعوبات حل المسائل الرياضية اللفظية من إعداد الباحث الشمري. (2012) أجريت الدراسة على عينة مكونة من 71 معلما في المرحلة الابتدائية، تم اختيارهم عشوائيا من مختلف المدارس الابتدائية التابعة لمديرية التربية الوطنية لولاية تيزي وزو. وأظهرت نتائج هذه الدراسة أن المعلمين يختلفون في تحديدهم للصعوبات التي يواجهها تلاميذ المرحلة الابتدائية في حل المسائل الرياضية اللفظية. وقد صنفت النتائج الصعوبات على النحو التالي: الأولى صعوبات في قراءة وفهم المشكلة الرياضية اللفظية، يليها التخطيط لحل المشكلة الرياضية اللفظية في المرتبة الثانية، ثم صعوبات تنفيذ حل المشكلة الرياضية اللفظية في المرتبة الثالثة. كما توصلت الدراسة إلى أن مستوى الصعوبات في حل المسائل الرياضية اللفظية لدى تلاميذ المرحلة الابتدائية من وجهة نظر معلمهم هو متوسط. الكلمات المفتاحية: مشكلة رياضية لفظية، حل مسائل رياضية لفظية، صعوبات في حل مسائل رياضية لفظية، طلاب المرحلة الابتدائية.

الكلمات المفتاحية: مشكلة رياضية لفظية، حل مسائل رياضية لفظية، صعوبات في حل مسائل رياضية لفظية، طلاب المرحلة الابتدائية.

• Introduction:

Amidst the rapid developments in science and technology, the importance of mathematics as a fundamental tool enabling individuals to adapt to these accelerating changes is increasingly recognized. Mathematics is not merely a collection of rules and equations; it represents a universal language that expresses complex patterns and relationships, contributing to the enhancement of critical thinking skills and the ability to solve everyday problems faced by individuals.

Mathematical word problems are a vital component of educational curricula, presenting a real challenge for students at various stages of their education, from elementary to secondary education and beyond. These problems not only enhance academic knowledge but also play a crucial role in developing comprehension and analytical skills, thereby strengthening students' ability to face challenges effectively.

Nevertheless, many students encounter significant difficulties in solving these problems, which may pose a barrier to their academic progress. These challenges are not limited to performance in mathematics but extend to negatively affect their overall academic achievement. This necessitates special attention from teachers and researchers to explore the reasons behind these difficulties and ways to enhance mathematical understanding.

1. Study Problem :

Mathematics holds a prominent position across various subjects and educational stages, significantly contributing to the development of students' skills. Excellence in this subject boosts students' self-confidence, whereas difficulties in learning it can lead to a decline in this confidence. Mathematics serves as a fundamental tool for developing critical thinking and problem-solving skills, which are essential for students' academic success and daily life.

Mathematics learning difficulties are among the most common and important challenges faced by students. A significant part of these difficulties stems from students' inability to comprehend the verbal formulations of mathematical problems. Research has shown that solving some of these problems can be facilitated when presented as simple arithmetic operations, highlighting the importance of framing problems in a manner that aligns with students' comprehension levels.¹

Verbal mathematical problems are a vital component in developing learners' problem-solving skills. Previous studies have emphasized that the primary goal of teaching mathematical problem-solving is to enhance students' ability to tackle real-life challenges. Further research suggests that mathematical problem-solving is closely linked to the general process of problem-solving, which involves rephrasing and analyzing problems, as well as representing and embodying them. Such processes may require synthesis, investigation, hypothesis formation, and testing their validity.²

Therefore, solving verbal mathematical problems is an integral part of modern curricula globally, as it promotes effective thinking through the use of strong mathematical methods. According to John Dewey, the steps of problem-solving are linked to the steps of effective thinking, highlighting the importance of focusing on this approach in teaching mathematics. This method is an effective way to learn new mathematical concepts and skills, enhancing the impact of learning and the discovery of new knowledge, sparking students' curiosity and desire for exploration.³

Additionally, verbal mathematical problems demonstrate students' ability to deeply understand problems and plan effectively to implement solutions. They also reflect students' skills in verifying the correctness of solutions and their ability to represent these problems. Collectively, these abilities foster critical and analytical thinking among learners, helping them face various challenges in mathematics and in their daily lives.

¹ Sultan Tahani Abdullah and Al-Shuhri Dhafir bin Farraj- A Therapeutic Program for the Difficulties of Solving Verbal Mathematical Problems among Third-Year Intermediate Female Students- Journal of Mathematics Education- V.22 - Issue 06- 2019- p141.

² Al-Hayman Maha Muhammad and Al-Amir Hanan Salem- The Effect of Using the (PQ4R) Strategy on Developing the Skills of Solving Mathematical Problems among First-Year Secondary Female Students- Journal of the Arabian Peninsula Center for Educational and Human Research- v.01- Issue 09- 2021- p100.

³ Al-Khuzam Awad Muflih- The Effect of Using the Polya Strategy in Teaching Verbal Mathematical Problems on Ninth-Grade Students' Ability to Solve Them in the Northern Western Badia Schools in Jordan- Scientific Journal of the Faculty of Education in New Valley- Issue 15- 2014- p127.

The National Council of Teachers of Mathematics (NCTM) has dedicated a specific standard to verbal problem-solving in its document on mathematics education standards, considering it a core goal of mathematics learning in schools. These problems serve as a primary tool for enhancing learning, encouraging students to engage in critical thinking during the solving process, allowing them to apply and develop diverse strategies for tackling new problems. These problems also provide students with a variety of thinking approaches, boosting their confidence when facing new situations outside the classroom. The document further emphasizes the importance of verbal mathematical problem-solving in the curriculum from kindergarten through twelfth grade, as it helps students build new mathematical knowledge and enables them to use multiple and appropriate strategies for solving, as well as reflecting on the solution process itself.⁴

Despite the importance of learning the necessary skills and strategies for solving verbal mathematical problems, students still face significant difficulties in this area, reflecting an urgent need to uncover these challenges. The difficulties in solving verbal mathematical problems are a relatively old issue that has not received sufficient attention in studies. With the increasing number of students experiencing these difficulties, focus on this issue has intensified, particularly in elementary education.

Thus, the difficulties in solving verbal mathematical problems are an old issue that has not been sufficiently studied. With the growing number of students struggling with these problems, it has become essential to focus on them, especially at the elementary stage, which is critical for building mathematical foundations.

Ramadan et al. (1996) indicate that there are noticeable difficulties in solving verbal mathematical problems among elementary school students. Furthermore, Abd Al-Aboodi's (2009) study shows that fifth-grade students face specific challenges when dealing with problems that involve more than one arithmetic operation.⁵ These studies highlight the need for effective educational strategies to help learners overcome these difficulties.

Despite the efforts in this field, there remains a significant gap in students' understanding of verbal mathematical problems. The data shows that these difficulties are increasing, particularly in elementary education, necessitating innovative educational strategies to enhance students' skills.

⁴ Al-Ja'fari Ali bin Mansour Hazim- Weakness in Solving Verbal Mathematical Problems among Elementary School Students: Causes and Remedies- Journal of Mathematics Education- V.23- Issue 04- 2020- p110.

⁵ Abdul Karim Muhammad Al-Mahdi Muhammad and Al-Harbi Ubaid bin Maz'al- Perceptions of Difficulties in Solving Verbal Mathematical Problems among Sixth-Grade Students Based on the Range and Sequence Matrix from Their Teachers' Perspectives- Journal of Psychological and Educational Sciences- V.02- Issue 01- 2016- p80.

From this standpoint, the importance of studying the difficulties in solving verbal mathematical problems among elementary school students from their teachers' perspectives becomes apparent. This study aims to answer the following questions :

- What are the most significant difficulties in solving verbal mathematical problems among elementary school students from their teachers' perspectives ?
- What is the level of difficulty in solving verbal mathematical problems among elementary school students from their teachers' perspectives ?

2. Study Hypotheses:

- **First Hypothesis:** Elementary school teachers differ in their identification of the most significant difficulties in solving verbal mathematical problems among students.
- **Second Hypothesis:** The level of difficulty in solving verbal mathematical problems among elementary school students is high from the teachers' perspective.

3. Importance of the Study :

The significance of this study lies in its focus on the difficulties in solving verbal mathematical problems among elementary school students. It aims to assist teachers in identifying and addressing these difficulties, enabling them to provide appropriate support to students in overcoming the challenges they face. By understanding these difficulties, students' mathematical skills can be enhanced, helping them to reach the required level.

Moreover, the study contributes to the development of specialized educational programs that cater to the needs of this age group, thereby improving the quality of education and ensuring students' success in various areas of mathematics. This type of research paves the way for improving teaching methods and raising academic achievement, which will positively impact students' future.

4. Study Objectives:

- Identify the most significant difficulties in solving verbal mathematical problems among elementary school students from their teachers' perspectives.
- Determine the level of difficulty in solving verbal mathematical problems among elementary school students from their teachers' perspectives.

5. Concepts of the Study:

5.1. Verbal Mathematical Problem:

Verbal mathematical problems are defined as tasks that require the integration of language skills with the skills of performing arithmetic operations. An individual seeking to solve these problems must be able to formulate a representation or description of the arithmetic operations needed to address the situation.⁶

They can also be defined as tasks that necessitate the learner's use of higher-order thinking skills to understand, organize, and mentally prepare the problem in order to seek an appropriate solution. This requires students to engage in critical and analytical thinking, thereby enhancing their overall problem-solving skills.

5.2. Solving Verbal Mathematical Problems:

Solving a verbal mathematical problem is defined as the process in which a student engages with the challenge of solving the problem, recalling and connecting the information they possess to devise a plan that leads to the correct solution.⁷

It can also be described as tasks that prompt the learner to attempt to restore balance after experiencing a disruption in their thinking due to the posed problem. The learner seeks to find the solution by following specific strategies learned from the textbook or by using higher-order thinking skills, which assist them in arriving at the appropriate solution to the verbal mathematical problem.

5.3. Difficulties in Solving Verbal Mathematical Problems:

Al-Zayyat (1998) defined the difficulties in solving verbal mathematical problems as the inability to represent the data of the problem or to transform linguistic formulations and structures into mathematical or arithmetic expressions or equations. Ibrahim (2008) defined them as anything that hinders the student from reaching a correct solution at any stage of the problem-solving process.⁸

⁶ Badawi Ramadan Mas'ad- Strategies in Teaching and Assessing Mathematics Learning- First Edition- Amman- Dar Al-Fikr- 2003- p208.

⁷ Al-Khuzam Awad Muflih- The Effect of Using the Polya Strategy in Teaching Verbal Mathematical Problems on Ninth-Grade Students' Ability to Solve Them in the Northern Western Badia Schools in Jordan- Scientific Journal of the Faculty of Education in New Valley- Issue 15- 2014- p132.

⁸ Sultan Tahani Abdullah and Al-Shuhri Dhafir bin Farraj- A Therapeutic Program for the Difficulties of Solving Verbal Mathematical Problems among Third-Year Intermediate Female Students- Journal of Mathematics Education- V. 22- Issue 06- 2019- p144.

They can also be defined as including difficulties related to the learner's reading and understanding of the verbal mathematical problem, difficulties in representing and translating it, as well as difficulties in planning and executing the solution. Additionally, there are challenges in verifying the correctness of the solution, along with difficulties related to the nature of the problem itself. Furthermore, these difficulties are also defined based on the scores obtained by the individuals in the study sample on the questionnaire for verbal mathematical problems prepared by the researcher Al-Shammari (2012).

5.4. Elementary School Students:

They are the students enrolled in the various grades from the first to the fifth grade of the 2023-2024 academic year in certain elementary schools affiliated with the Education Directorate of Tizi Ouzou Province.

6. Previous Studies:

6.1. Asaad and Al-Hamoud Study (2021): This study aimed to identify the difficulties in solving verbal mathematical problems. The results showed that the difficulties in reading and understanding the verbal mathematical problem ranked first in terms of severity among the challenges faced by students, while difficulties in verifying the correctness of the solution ranked last. These results highlight the importance of enhancing reading and comprehension skills among students to improve their ability to solve verbal mathematical problems.⁹

6.2. Abdul Qadir Study (2017): This study aimed to uncover the difficulties faced by high school students in solving verbal mathematical problems. The results identified a range of difficulties, primarily the challenge of evaluating the solution to the verbal problem, along with the importance of connecting verbal mathematical problems to students' real-life experiences. The study recommended that teachers adopt teaching methods and strategies that help alleviate these difficulties, thereby improving students' academic performance and enhancing their ability to effectively tackle mathematical problems.¹⁰

6.3. Al-Balawi Study (2016): This study aimed to reveal the level of difficulty in the steps of the strategy for solving verbal mathematical problems among middle school students from the teachers' perspective. The results indicated that the difficulty of implementing the solution plan ranked first, followed by the difficulty of understanding the verbal problem, and then the difficulty of planning

⁹ As'ad Saba Ali and Al-Hamoud Lamis- Identifying the Difficulties of Solving Verbal Mathematical Problems among Third-Grade Students from Their Teachers' Perspective- Journal of Al-Baath University- V.44- Issue 29- 2021.

¹⁰ Abdul Qadir Khalid Faiz- Difficulties in Solving Verbal Mathematical Problems among Secondary School Students in Gaza Governorates- Journal of Al-Aqsa University (Humanities Series)- V.21- Issue 01- pp. 218,246- 2017.

to solve it. These findings underscore the necessity of enhancing execution, understanding, and planning skills among students to improve their performance in solving mathematical problems.¹¹

6.4. Ghafour Study (2012): This study aimed to identify the difficulties faced by third-grade students in solving mathematical problems from their perspective. The results highlighted several difficulties, including confusion between mathematical laws, repeated absences leading to poor understanding, some students' inability to comprehend problem formulations, and teachers' weaknesses in effectively conveying lessons. These findings emphasize the importance of improving teaching methods and enhancing attendance and commitment among students to facilitate their understanding and problem-solving abilities in mathematics.¹²

6.5. Al-Shammari Study (2012): This study aimed to identify the difficulties faced by ninth-grade students in solving verbal mathematical problems in Kuwait from the teachers' perspective. The study found that the difficulties included challenges in reading comprehension, planning to solve the problem, challenges related to the nature of the problems, and difficulties in representing the problem. All these difficulties were reported at a moderate level.¹³

6.6. Bernadette Study (2009): This study aimed to identify the difficulties faced by third-grade elementary students in solving verbal mathematical problems. The results showed that the most prominent difficulties were related to a weak level of reading comprehension and poor mathematical concepts, indicating the need to enhance reading and comprehension skills and strengthen conceptual foundations in mathematics.¹⁴

6.7. Lewis et al. Study (1994): This study aimed to investigate the ability to understand mathematical relationships through verbal mathematical problem statements. It found that there

¹¹ Al-Balwi A'id bin Ali Muhammad- The Level of Difficulty of the Steps of the Strategy for Solving Verbal Mathematical Problems among Intermediate School Students from Teachers' Perspectives- Journal of the College of Education- Issue 19- 2016.

¹² Ghafour Kamal Ismail- The Difficulties Students Face in Solving Mathematical Problems for Third-Grade Teacher Preparation from Students' Perspectives- Al-Fath Journal- Issue 48- 2012.

¹³ Al-Shammari Khalid Khamis- The Difficulties Faced by Ninth Grade Students in Solving Verbal Mathematical Problems in Mathematics from Teachers' Perspectives in the State of Kuwait- Master's Thesis, College of Educational Sciences, Middle East University, Kuwait.

¹⁴ Bernadette, E- Third Grade Students' Challenges and Strategies for Solving Mathematical Word Problems- M.A. Dissertation, The University of Texas at El Paso, Texas, United States- 2009.

were difficulties in solving these problems, primarily due to a lack of understanding of the statements provided and difficulties in organizing and arranging the information in the problem.¹⁵

***Commentary on Previous Studies:**

These studies collectively indicate that the difficulties in solving verbal mathematical problems stem from various factors, including reading, comprehension, and planning skills. It is essential to adopt comprehensive teaching strategies that target these areas while focusing on connecting the curriculum content to the students' daily lives. Additionally, individual learning differences must be taken into account, providing the necessary support for each learner to achieve success in this domain.

For instance, the study by Asaad and Al-Hamoud (2021) emphasized the importance of reading and comprehension skills in addressing the difficulties of solving mathematical problems. In contrast, Abdul Qadir's (2017) study highlighted the significance of linking mathematical problems to the students' real-life experiences. This aspect could be fundamental in motivating students and increasing their interest in mathematics.

Furthermore, Al-Balawi (2016) pointed out the importance of executing the solution plan and understanding the problem. This adds a new dimension to considering how to teach planning and execution strategies. It could be beneficial to explore innovative teaching techniques that support these skills, such as active learning or project-based learning.

The study by Ghafour (2012) underscored the difficulties associated with understanding problem formulations and confusion between mathematical laws. This highlights the need for improving teaching methods, especially in how mathematical concepts are presented. Meanwhile, Al-Shammari's (2012) study posited that the difficulties in solving verbal mathematical problems relate to reading comprehension and planning, necessitating a focus on developing critical reading skills among students.

It is also important to implement integrated teaching strategies that address the multiple difficulties faced by students, rather than solely focusing on one aspect. On the other hand, Bernadette (2009) shed light on the link between poor reading comprehension and mathematical concepts. Here, it is advisable to propose educational programs that target the development of both skills in parallel, emphasizing the incorporation of reading comprehension skills into mathematics curricula.

Lastly, the study by Lewis et al. (1994) highlighted the importance of understanding mathematical statements and organizing information. In this context, developing educational

¹⁵ Lewis, A., and Mayer, A- Assessing Mathematics Learning for Students with Learning Differences, Arithmetic Teacher-V.41- No 07- pp. 321,380- 1994.

materials that assist students in visualizing and arranging information more effectively, such as using diagrams or visual aids, would be beneficial.

7. Methodological Procedures of the Study:

7.1. Study Method :

This study relied on the descriptive method, as it is considered the most suitable for achieving the objectives of the current study, focusing on describing the phenomenon.

7.2. Study Population:

The study population consists of 237 primary school teachers distributed across several elementary schools affiliated with the National Education Directorate of Tizi Ouzou Province.

7.3. Study Sample:

Recognizing the importance of an appropriate sample that accurately represents the original population, a simple random sampling method was employed to select the study sample. The sample consisted of 71 primary school teachers distributed across several elementary schools in Tizi Ouzou Province.

7.4. Study Instrument:

The researcher Al-Shammari (2012) developed a questionnaire to identify the difficulties faced by ninth-grade students in solving verbal problems in mathematics. This was done after reviewing the theoretical literature and previous studies related to the topic.

7.4.1. Validity of the Instrument:

The validity of the instrument was verified by presenting it to a panel of reviewers consisting of faculty members specializing in curricula, teaching methods, and mathematics at Jordanian and Kuwaiti universities. This was done to ensure the clarity of the items, their linguistic appropriateness, and their relevance to the domain they measure. Based on this feedback, the study instrument was finalized, consisting of 38 items arranged according to a five-point Likert scale, which includes five rating categories: (very low, low, medium, high, very high). The items were distributed across six domains as follows:

- **Domain One:** Difficulties in reading and understanding verbal mathematical problems, containing 7 items (from 1 to 7).

- **Domain Two:** Difficulties in representing (translating) verbal mathematical problems, containing 4 items (from 8 to 11).
- **Domain Three:** Difficulties in planning to solve verbal mathematical problems, containing 6 items (from 12 to 17).
- **Domain Four:** Difficulties in executing the solution to verbal mathematical problems, containing 8 items (from 18 to 25).
- **Domain Five:** Difficulties in verifying the correctness of the solution, containing 5 items (from 26 to 30).
- **Domain Six:** Difficulties related to the nature of verbal mathematical problems, containing 8 items (from 31 to 38).

7.4.2. Reliability of the Instrument:

The researcher assessed the reliability of the questionnaire using two methods. The first method was the test-retest method, where the instrument was administered to a sample of ninth-grade teachers and then readministered after two weeks. The Pearson correlation coefficient was used to calculate reliability, yielding a value of 0.87, which is deemed suitable for the study's purposes. The second method involved measuring internal consistency using Cronbach's alpha, calculated via computer, which yielded a value of 0.89, also considered appropriate for the study's purposes.

***Psychometric Properties of the Questionnaire in the Current Study:**

– Validity of the Questionnaire:

To verify the validity of the questionnaire, internal consistency was assessed by calculating the correlation coefficient between each item and the total score of the dimension to which the item belongs, as well as the correlation between each item and the total score of the questionnaire, and the correlation between the total score of the dimension and the total score of the questionnaire. Most items showed statistically significant results at the significance levels of (0.01) and (0.05). Based on these results, items that met the following two criteria were retained:

- The item must have a statistically significant correlation with both the total score of the dimension to which it belongs and the total score of the questionnaire; it is not sufficient for it to show significance with only one.
- The correlation of the item with the total score of the dimension it belongs to and the total score of the questionnaire must not be less than 0.25. Consequently, all questionnaire items were retained.

- Reliability of the Questionnaire:

The reliability of the questionnaire was calculated using two methods: the first being Cronbach's alpha for the total score of each dimension of the questionnaire and the total score of the questionnaire, with all values showing statistical significance. The second method involved split-half reliability by correlating the two halves and using the Spearman-Brown and Guttman equations, as well as the alpha coefficient for each half separately for each dimension of the questionnaire and the questionnaire as a whole. The following table illustrates this:

Table 01: Reliability Coefficient Values for Each Dimension of the Questionnaire and Its Overall Score

	Cronbach's Alpha	Split-Half Correlation	Spearman-Brown	Guttman
Difficulties in Reading and Understanding Verbal Mathematical Problems	0.73	0.49**	0.69	0.68
Difficulties in Representing (Translating) Verbal Mathematical Problems	0.63	0.57**	0.61	0.57
Difficulties in Planning the Solution of Verbal Mathematical Problems	0.62	<i>0.40*</i>	0.61	0.57
Difficulties in Executing the Solution of Verbal Mathematical Problems	0.71	0.67**	0.67	0.65
Difficulties in Verifying the Accuracy of the Solution	0.64	0.52**	0.62	0.61
Difficulties in Solving Problems Related to the Nature of Verbal Mathematical Problems	0.68	0.70**	0.66	0.64
Overall Score	0.71	0.61**	0.68	0.66

*Significant at the 0.01 level / **Significant at the 0.05 level.

From Table 01, it is evident that the Cronbach's alpha reliability coefficients for the dimensions of the questionnaire ranged between 0.62 and 0.73, while the overall questionnaire score reached 0.71. The split-half reliability coefficients for the dimensions ranged from 0.40 to 0.70, with the overall questionnaire score being 0.61. Using the Spearman-Brown and Guttman formulas, the values were also statistically significant. Additionally, the Cronbach's alpha values for both halves were relatively high, making the questionnaire suitable for the purposes of this study.

*Levels of the Questionnaire

Table 02: Questionnaire Levels

Dimension	35-86	87-138	139-190
Level	Low	Medium	High

8. Presentation and Interpretation of Study Hypothesis Results:

8.1. Presentation of Study Hypotheses Results:

• Presentation of the First Hypothesis Results:

The first hypothesis states: "Elementary school teachers differ in identifying the most important difficulties in solving verbal mathematical problems among students." To verify this hypothesis, the mean and standard deviation for each dimension of the questionnaire were calculated, as shown in the following table:

Table 03: main difficulties in solving verbal mathematical problems.

Questionnaire Dimensions	Mean	Standard Deviation
Difficulties in Reading and Understanding Verbal Mathematical Problems	29.14	4.96
Difficulties in Planning the Solution of Verbal Mathematical Problems	28.64	3.92
Difficulties in Executing the Solution of Verbal Mathematical Problems	25.11	4.11
Difficulties Related to the Nature of Verbal Mathematical Problems	20.64	3.39
Difficulties in Verifying the Accuracy of the Solution	18.11	3.32
Difficulties in Representing (Translating) the Solution of Verbal Mathematical Problems	13.71	2.72

It is clear from Table 03 that the difficulties in solving verbal mathematical problems are as follows: the difficulties in reading and understanding the verbal mathematical problem have a mean of (29.14), followed by difficulties in planning to solve the verbal mathematical problem with a mean of (28.64), then difficulties in implementing the solution to the verbal mathematical problem with a mean of (25.11), followed by difficulties in solving the problem related to the nature of verbal mathematical problems with a mean of (20.64), then difficulties in verifying the solution

with a mean of (18.11), and finally, difficulties in representing (translating) the verbal mathematical problem with a mean of (13.71), respectively.

• Presentation of the Second Hypothesis Results:

The second hypothesis states: "The level of difficulties in solving verbal mathematical problems among elementary school students from the teachers' perspective is high." To verify this hypothesis, the mean and standard deviation of elementary school teachers' responses on the questionnaire were calculated and compared to the previously defined levels of the questionnaire, as shown in the following table:

Table 04: Level of Difficulties in Solving Verbal Mathematical Problems Among Primary School Students from the Perspective of Their Teachers

Frequency	Mean	Standard Deviation	Medium Level Range
71	135.38	17.65	87-138

It is evident from Table 04 that the mean of the difficulties in solving verbal mathematical problems among elementary school students was (135.38), thus falling within the average level of the questionnaire, which ranges from (87-138). Consequently, the hypothesis was not confirmed, meaning that the level of difficulties in solving verbal mathematical problems among elementary school students, from their teachers' perspective, is average.

8.2. Interpretation and Discussion of Study Hypothesis Results:

The statistical results for the first hypothesis indicate a difference among elementary school teachers in identifying the most significant difficulties in solving verbal mathematical problems among students. The most prominent of these difficulties were:

1. Difficulties in reading and understanding verbal mathematical problems.
2. Difficulties in planning to solve verbal mathematical problems.
3. Difficulties in executing the solution to verbal mathematical problems.

These results align with the study by Al-Khuzam (2014)¹⁶, which confirmed that difficulties in reading, understanding, and planning are among the main challenges faced by students (Al-Khuzam, 2014). The difficulties in reading and understanding verbal mathematical problems are related to students' weak ability to comprehend the vocabulary and concepts used, which hinders their ability to identify data and read information correctly. The main challenges include difficulties in identifying and comprehending the data, reading figures and tables, and determining the requirements of the problem, as well as difficulties in retaining the problem in memory.

As for the difficulties in planning the solution, they are related to students' unfamiliarity with appropriate solution strategies, where they face challenges in selecting the right strategy and determining the necessary steps to reach a solution. Regarding the difficulties in executing the solution, students find it challenging to integrate processes, organize them, and apply the appropriate strategies. They struggle to remember mathematical concepts, which affects their ability to solve problems accurately and effectively.

These results underscore the importance of developing effective educational strategies to enhance reading, understanding, planning, and execution skills. It is essential to provide a learning environment that supports students in overcoming these challenges, which will contribute to improving their overall performance in mathematics.

The statistical results for the second hypothesis indicate that the level of difficulties in solving verbal mathematical problems among elementary school students, from their teachers' perspective, is average. This can be interpreted as reflecting students' abilities in understanding and reading, indicating a need to improve their reading and comprehension skills. This result is consistent with previous studies, such as the study by Abd (Al-Aboudi, 2002)¹⁷ and the study by Abdul Qader (2017)¹⁸, which confirmed the presence of similar difficulties, indicating an urgent need to enhance teaching strategies. It is crucial to focus on improving reading skills, as a good understanding of the problem is a fundamental step toward effective solutions.

The average level of planning difficulty reflects students' lack of habit in organized thinking, which negatively impacts their ability to solve problems efficiently. This aligns with Bernadette's

¹⁶ Al-Khuzam Awad Muflih- The Effect of Using the Polya Strategy in Teaching Verbal Mathematical Problems on Ninth-Grade Students' Ability to Solve Them in the Northern Western Badia Schools in Jordan- Scientific Journal of the Faculty of Education in New Valley- Issue 15- 2014.

¹⁷ Abdul Al-Aboudi Ahmad Hamza- Difficulties in Solving Verbal Problems in Mathematics among Fifth-Grade Students from Their Teachers' Perspectives- Journal of Humanities. College of Education for Girls, University of Kufa, Iraq- 2006.

¹⁸ Abdul Qadir Khalid Faiz- Difficulties in Solving Verbal Mathematical Problems among Secondary School Students in Gaza Governorates- Journal of Al-Aqsa University (Humanities Series)- V.21- Issue 01- pp. 218,246 -2017.

study (2009)¹⁹, which confirmed that students face similar difficulties. Furthermore, the results indicate the need to develop execution skills and practical application of mathematical strategies through educational programs that enhance students' ability to transition smoothly between verbal and mathematical symbols.

This perspective emphasizes the importance of focusing on developing organized thinking and execution skills among students, which contributes to improving their performance in mathematics and enhances their confidence in facing academic challenges.

• **Conclusion:**

This study aims to highlight the difficulties in solving verbal mathematical problems among elementary school students from their teachers' perspective. This research seeks to assist teachers in adopting appropriate teaching strategies that align with students' needs. It also contributes to improving curricula and textbooks by making adjustments to the vocabulary and phrases used in mathematical problems, in addition to rephrasing these problems in a way that allows all students to read and understand them easily, facilitating their ability to reach solutions.

The current study reached the following conclusions:

- Elementary school teachers differ in identifying the most significant difficulties in solving verbal mathematical problems among their students.
- The level of difficulties in solving verbal mathematical problems among elementary school students, from their teachers' perspective, is average.

Based on the study results, the following recommendations can be made:

- Explain the relationship between the components of solving mathematical problems: It is essential to clarify how the elements of a mathematical problem interconnect to facilitate students' understanding, along with explaining difficult vocabulary and concepts that may hinder their comprehension.
- Train students on careful reading: Training sessions should be organized to enhance effective reading skills, helping students understand the nuances in mathematical texts.
- Develop students' knowledge of general problem-solving strategies: Students should be taught multiple strategies for solving problems, enabling them to choose the most suitable method when facing mathematical issues.

¹⁹ Bernadette, E.- Third Grade Students' Challenges and Strategies for Solving Mathematical Word Problems- M.A. Dissertation, The University of Texas at El Paso, Texas, United States- 2009.

- Continuous assessment of students' ability to represent problems: Periodic assessments should be conducted to measure students' ability to represent and understand mathematical problems, aiding in identifying their strengths and weaknesses in skills.