INSTABRIGHT e-GAZETTE
ISSN: 2704-3010
Volume V, Issue II
November 2023
Available online at https://www.instabrightgazette.com

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DIFFICULTIES IN COMPREHENDING AND SOLVING WORD PROBLEMS IN MATHEMATICS AMONG GRADE FOUR FAITH STUDENTS OF STO. TOMAS NORTH CENTRAL SCHOOL

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ABSTRACT

(Purpose) This study evaluated the difficulties in comprehending and solving word problems in Mathematics among Grade Four – FAITH students at Sto. Tomas Central School, Sto. Tomas, Batangas. It aimed to assess the level of performance of the students who experienced difficulties in comprehending and solving word problems in mathematics and the interventions to be suggested to enhance their skills in mathematics. (*Methods*) This is a descriptive survey with grade four students as respondents. There were 15 males and 26 females from Grade Four – FAITH section. The mathematics proficiency and performance level of Grade 4 students were described as beginning. The 10-item problem-solving test involving the four fundamental operations was given during the 3rd quarter of the school year 2018-2019 to 41 Grade Four FAITH students. Scores in this test measured their performance level in word comprehension and solving problems in mathematics. (*Findings*) Results indicate that 87.80% of students got a percentage score of 70 and below. This suggests that many students were having trouble understanding and resolving mathematical word problems.

Keywords: *Comprehending, Difficulties, Word Problem*

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INTRODUCTION:

Mathematics is an important foundation and influence on a country's development. The study of mathematics helps individuals to reason and apply such reasoning to everyday problems. Thus, mathematics develops the mind to think critically and analytically.

We in the Philippines cannot ignore the fact that every year graduates from our educational institutions throughout the archipelago lack the necessary mathematical skills. The 1999 results of the Trends in International Mathematics and Science Studies showed how far behind the Philippines had been with its other neighboring countries in Asia. In the TIMSS, With a mean score of 358, the Philippines came in third from the bottom, falling short of the international average of 495 by 138 points. The world's worst math performer, South Africa, did not compete, so the Philippines again outperformed only two countries: Morocco (347) and Tunisia (339). This means that Filipino educators need to double the efforts in improving the quality of math education they cater to students.

In the Division of Batangas, the result of the National Achievement test in the last 3 years showed low performance in mathematics. In light of this outcome, remedial evaluation was implemented to raise the students' performance level. The implemented remedial program of the Education Program Supervisor of Mathematics, headed by Elizabeth Tolentino, Ed.D proved to be effective in improving the academic performance of elementary pupils in mathematics in the Division of Batangas Province.

One of the biggest public elementary schools in the province of Batangas is Tomas North Central School. It comprises 2216 student populations, 85 teaching and 3 non-teaching personnel. The school is one of the performing schools in the Division in different aspects. However, in terms of the academic performance of the students in Mathematics, the assessment shows that the students have a low performance level, particularly in Grade 4 Faith. The researcher, who

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ISSN: 2704-3010
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also served as the grade-level adviser, noticed significant difficulties with her students' comprehension and analysis of mathematical word problems. Only 5 out of 41 students could successfully solve word problems with or without the help or supervision from the teacher. This means that there are 87.80% need guidance and support in able for them to understand or comprehend word problems. The researcher believes that there is a need to diagnose their mathematical proficiency on the basic mathematical concepts that may have acquired. It is the responsibility of the school to provide pupils with a solid foundation in mathematical ideas and symbols so that they won't be left behind when they continue their education in higher education. Because of this, the researcher tried to evaluate the student's ability to understand and solve word problems in mathematics in Grade IV—FAITH.

RESEARCH METHOD:

In gathering the data, the researchers sought first permission from the school principal to administer her study. The test will then be distributed to the Grade Four-Faith pupils. There will be ten (10) items of word problems in mathematics that focus on solving word problems. This aims to determine the difficulties of pupils in comprehending and solving word problems. The score in the test was recorded and computed the percentage score. Those students who've got a percentage score of 80% and above remarks passed, while the students who got a percentage score of 70% and below marked failed and were therefore subject to the study.

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RESULTS AND DISCUSSION

This part presents the analysis and interpretation of data based on the subject of the study.

Table 1

Results of the Test to determine the Percentage of Students in comprehending and solving word problems

Raw Score	Number of Students	Percentage Score	Remarks
10	0	100%	Passed
9	2	90	Passed
8	3	80	Passed
7	2	70	Failed
6	5	60	Failed
5	7	50	Failed
4	10	40	Failed
3	9	30	Failed
2	3	20	Failed
1	0	10	Failed
0	0	0	Failed

Table 1 shows the scores of pupils in comprehending and solving word problems in mathematics. It can be gleaned that out of 41 students in Grade Four–Faith, only 5 students passed the test with a score percentage of 80% and above, while 36 students failed with a percentage score of 70% and below. It implies that the majority of students' attempts to solve

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problems were hampered by their complete lack of comprehension of the issue. Because of this, some students find it harder to solve problems when there are more words between the numerical features of the problem. In this connection, some pupils have difficulties with problem-solving as the number of words between the numerical features of the problem increases. Most mathematical word problems have too many words that students do not recognize. Many students will grow fearful of problem-solving problems because of the strong demand for vocabulary words in them. Hence, different structure features will predict problem-solving difficulties and the students will not attempt to solve the word problem. Students have a hard time at problem-solving because of the difference in language meanings

Table 2

Percentage of Grade Four-Faith according to their equivalent score

Equivalent Score	Frequency	Percentage
80 and above	5	12.20%
70 -below	36	87.80%
Total	41	100%

Table 2 presents that out of 41 students of Grade Four-Faith, 5 or 12.20% got a percentage score of 80 and above while 36 or 87.80% students got a percentage score of 70 and below. This suggests that a large number of students were having trouble understanding and resolving mathematical word problems. Moreover, it cannot be denied that problem-solving is an important part of mathematics. However, before a student can successfully solve a problem, he has to possess good reading comprehension as well as analytical and computational skills. Problem-solving is the real test of mathematical abilities. It has to do with comprehending the issue, which in reality necessitates reading comprehension. It also requires the proper operations

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of the numbers/expressions involved. As a result, reading comprehension and problem-solving skills need to go hand in hand. It is a double-edged sword.

Table 3

Factors affecting students' difficulties in comprehending and solving word problems in Mathematics among Grade IV Faith Students

Factors affecting students' difficulties in comprehending and solving word problems	Weighted mean	Verbal Interpretation	Rank
Lack of comprehension	3.53	Strongly Agree	1
Incorrect operation to be used	3.03	Agree	2
Unfamiliar words used in the problem	2.94	Agree	3.5
Carelessness	2.94	Agree	3.5
Inability to recall past lessons	2.89	Agree	5
Lack of interest in Math subject	2.50	Disagree	6
Lack of time	2.03	Disagree	7

Table 3 shows the factors affecting students' difficulties in comprehending and solving word problems in mathematics. The highest weighted mean was 3.53 which focuses on the lack of comprehension of pupils. This implies that many students struggle in mathematics in terms of analyzing word problems. The researcher believes that improving comprehension skills in mathematics typically requires students attention to the activities or process of developing concepts, building comprehension skills, and reading related materials.

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Indeed, the mathematics teachers must plan to build an understanding of the language of mathematics and the ability to translate it, in able for the students to have an adequate understanding of the vocabulary of mathematics and easy learning of the mathematical principles and techniques.

However, it also shows that there is a need to improve the number of hours in terms of facilitating questions about mathematical word problems. The study shows 2.03 percent weighted mean for the lack of time. According to Bernardo (1999), the abilities to give good concentration, to make meaningful perceptions, to think logically, and to use memory effectively are important factors in learning skills and solving problems. These abilities vary among students. With this, the researcher believed that the pupils might experience difficulties in thinking and learning when they demonstrated difficulty in giving attention because of the lack of time.

Table 4

Proposed Action Plan to enhanced students' comprehension and solving word problems on Mathematics

Objectives	**Activities**	**Persons Involved**	**Time Frame**	**Expected Output**
Inform the school head about the action research to be undertaken	Meeting or conference with the school head	Principal /school head	August 16, 2019	Granted permission to conduct the research
Introduce the action research to pupils and teachers	Orientation of the pupils and co-teachers regarding the action research	Co-Math Teacher, Grade IV Pupils	August 19, 2019	Pupils and Teachers will be aware of the on-going research

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Improve the pupils' limited vocabulary words in Mathematics	Survey the Mathematics vocabulary skills of the pupils	Grade IV Pupils	August 20, 2019	100% of the pupils will be surveyed
	Provide unlocking of difficulties through Daily Vocabulary Log before the beginning of Math class	Grade IV - Pupils	August 26, 2019	The class will develop and enhance their Math vocabulary skills
	Provide interesting and challenging vocabulary activities involving Math vocabulary	Math Teacher, Grade IV - Pupils	August 28,2019	Pupils will participate more actively in discussion and activities
Establish a tutor-tutee relationships in problem solving	Assigned fast learner to tutor the slow learner classmates	Fast learner, Slow learner	August 29, 2019	Slow learners will learn from their tutor-classmates
Develop the pupils' techniques in solving word problems	Ask the students to make a representation of objects like ruler, play money, dice, etc. draw or act out so they will be able to visualize the problem	Grade IV-pupils, Math teacher	September 2 to 6, 2019	Pupils can manipulate and be aided by the materials in solving word problems
	Substitute large number to a simpler number and used them instead of	Grade IV-Pupils, teacher	September 9 to 13, 2019	Pupils will be able to simplify the problem and substitute

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	what are given in the problem			simpler numbers to given numbers
	Make a number sentence by substituting the English sentence into mathematical sentence	Grade IV Pupils, teacher	September 16 to 20, 2019	Pupils will be able to master writing number sentence
Develop journal of Mathematics word problems	Make a list problem solving into journal	Grade IV Pupils, teacher	August 16 to September 20, 2019	Pupils will be able to have a list of problem solving will serve as references

Table 4 shows the proposed action plan of activities to enhance students' comprehension and solve word problems in mathematics. The action plan must create an orientation for the teacher and obtain approval from the head of the school. The plan aimed to improve the pupils' limited vocabulary words in Mathematics by surveying students' vocabulary skills in math, providing vocabulary development before the start of math class, and providing challenging activities involving Math vocabulary. Additionally, it aims to create a relationship between tutor and tutee in problem-solving, where students who learn quickly will mentor students who learn slowly. It hopes to develop the pupils' techniques in solving word problems by allowing students to make representations of word problems using objects such as play money, ruler, dice, draw, or to act out to be able to visualize the problem, substitute large numbers to a simpler number and make a number sentence by substituting the English sentence into a mathematical sentence. Also, it attempts to gather math word problems into a notebook for reference in the future.

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CONCLUSION AND RECOMMENDATION

The difficulties experienced by students in comprehending and solving word problems are the lack of comprehension skills. This implies that many students struggle in mathematics in terms of analyzing word problems. The researcher believes that improving comprehension skills in mathematics will lessen the errors in solving word problems.

The findings of the study suggest a focus on teaching mathematical concepts and vocabulary skills and the need to expose the students to a variety of math problems that demand that they use critical thinking by experimenting with various approaches that are suitable for resolving the issue. Thus, the mathematics teachers must plan to build an understanding of the language of mathematics and the ability to translate it, in able for the students to have sufficient knowledge of mathematical terminology and ease of acquisition of mathematical concepts and methods. The mathematics teachers are suggested to start with inferential comprehension and literal comprehension drills to increase the success of students with low levels of comprehending word problems. The mathematics teachers can also create teaching resources that give students the steps and techniques that make it simple for them to understand, solve, and learn how to solve problems.

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ISSN: 2704-3010
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REFERENCES:

Bernardo, A.B.I (1999) *Overcoming Obstacles To Understand And Solving Word Problems In Mathematics.* Educational Psychology, 149-164

Estonio, et al, (2017) *Effectiveness Of Mathematics Proficiency Session(MPS) For Primary*. Asia Pacific Journal of Multidisciplinary Research, Vol.5 No.3

Journal of Education and Training Studies, Vol 5, (2017) Retrieved from https//jet.redframe.com

Kintch,W.,&Greeno, G (1985). *Understanding And Solving Word Arithmetic Problems*. Psychological review, 92(1), 109-129

Lopez,L. (2008) *Helping At Risk Students Solve Mathematical Word Problems Through Direct Instruction And Problem Solving Strategies*. Journal for Research in Mathematics Education

TIMSS, (1999) Achievement Report. Retrieved September 2016 from https://timss.bc.edu/timss1999math_achievement_report.html

Yeo, K.K.J. (2009) *Secondary 2 Students Difficulties In Solving Non-Routine Problems*, International Journal for Mathematics Teaching

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