© IJARW | ISSN (O) - 2582-1008
December 2025 | Vol. 7 Issue. 6
www.ijarw.com

READING COMPREHENSION SKILLS AND WORD PROBLEM-SOLVING ABILITY IN MATHEMATICS OF GRADE 10 JUNIOR HIGH SCHOOL STUDENTS

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ABSTRACT

Reading Comprehension Skills vs. Mathematical Word Problem-Solving Ability: An Exploratory Study on Grade 10 Students of Bukidnon National School of Home Industries for SY 2025-2026. The objective of this study is to investigate the correlation between reading comprehension skills and the capacity of grade ten students to solve word problems in mathematics in order to develop an understanding of how reading comprehension skills support math word problem-solving ability among students of the Bukidnon National School of Home Industries for the school year 2025-2026. A total of 261 students were chosen randomly through a stratified random sampling method for this exploratory study utilizing a quantitative descriptive-correlational approach. Data was collected through standardized tests. Results from descriptive statistical measures and the Pearson r indicate a significant-to-moderate positive correlation (r = 0.6382, p < .001) between reading comprehension and word problem-solving abilities in mathematics; thus, students who possess greater reading comprehension will have higher performance levels when solving word problems in mathematics. This study offers evidence of the relationship between reading and math and creates a foundation for developing programs that enable students to analyze texts and improve their problem-solving capabilities.

Keyword: Reading Comprehension Skills, Word Problem Solving Kills, Literacy and Numeracy Skills, correlation

INTRODUCTION

The foundations of a student's academic journey are built upon proficiency in reading and mathematics—skills that serve as the gateway to learning across all disciplines. Reading comprehension is defined as the ability to create meaning from text, and it is not solely a reading-based skill, but rather a cognitive skill that has implications for learning in other subject areas, including math. Math is not just a number-based subject that involves computation, but it also involves reasoning, analysis and problem-solving. When students are faced with word problems in math, they are asked to not only do computations, but also to decipher linguistic clues, comprehend the context and apply the appropriate strategy to solve the problem. Therefore, there is a substantial relationship between literacy and numeracy and this relationship is frequently ignored in educational practice, yet it is important for successful learning.

Both teachers and students observe how reading skills relate to math performance. Learners are able to carry out simple arithmetic operations but many have difficulty with word problems. Many times, the learner misunderstands what the question is asking, misses key information or has difficulty relating the words to the math. This experience that students have, where they can read, but not necessarily understand, is an example of a major educational problem. The experience becomes worse at the secondary level, particularly at the 10th-grade level. Students at this age level are exposed to much more complex math concepts and rely heavily on their reading skills. However, reading and math are frequently taught as separate entities. As a result, instructional practices tend to teach these skills independently of each other.

There are logical reasons why the relationship between reading and math should be investigated further, given national and international data. According to the PISA 2022 report, only 24 percent of Filipino students reached the minimum

proficient level in reading while only 16 percent achieved the standard in mathematics. These figures are lower than the global averages, indicating that there is a double deficit in literacy and numeracy.

The PISA results reveal a critical problem, which is the inability of Filipino learners to process and understand the math problems that are presented in a text format. As a matter of fact, the development of reading comprehension may turn out to be a means of raising the level of mathematics skills. The current research is geared towards satisfying such a need by analyzing the correlation between reading comprehension skills and math word problem-solving skills among grade 10 students from Bukidnon National School of Home Industries during the academic year 2025-2026.

The school is situated in Bukidnon province and is representative of the public secondary schools that are typical for the district, are generally short of resources, but have a diverse student population. Researching on this targeted small sample yields localized empirical data which contributes to the educational research in the Philippines and is limited when compared to the other countries. This study helps to understand better the influence of language comprehension on mathematical reasoning of Filipino learners and thus it would be of great help to teachers, curriculum developers, and education policymakers.

The primary goal of this study is to investigate the connection or relationship of reading comprehension skill and problem solving in math with 10th graders from the Bukidnon National School of Home Industries. More specifically, this study will identify the degree of proficiency of the reading comprehension of 10th-grade students, evaluate the degree of problem-solving ability of those same 10th-grade students, and explore the relationship between reading comprehension and their ability to solve word problems in mathematics.

In addition to being practically relevant, the study also adds theoretical value by providing the application of three different frameworks—Schema Theory (Anderson, 1977; Mayer, 1985), Polya's Problem-Solving Theory (1945), and Cognitive Load Theory (Sweller, 1988)—to understand how reading comprehension connects to problem-solving in mathematics. Schema Theory identifies that reading comprehension stimulates prior-knowledge structures, which enable students to read and relate text to their existing knowledge of mathematical concepts. According to Polya's stages of problem-solving, the interpretation of the problem (the first and most important stage) relies on reading comprehension. Cognitive Load Theory suggests that students with low reading comprehension abilities will experience cognitive load, thus they will have limited mental processing capacity for analytical thinking.

These theories collectively indicate that linguistic understanding influences mathematical performance of students, hence providing a considerable theoretical basis for this research.

The study becomes an empirical work by exploring the degree of connection between reading comprehension and word-problem solving by means of a quantitative correlational design. The study, by using standard measures of reading comprehension and mathematical word-problem solving, and applying statistical procedures through Pearson's r, yields objective data on the strengths and directions of associations between reading comprehension and word-problem solving ability that can be used to guide educational practice and public education policy decisions.

Firstly, this research is not only significant because of its limited local scope but also because of its interdisciplinary perspective that considers literacy and numeracy as two interrelated (rather than independent) skills. The results of this study could potentially lead to the development of integrated pedagogical models where reading comprehension skills are incorporated into mathematics instruction, thereby supporting the simultaneous development of reading comprehension and mathematical problem-solving skills.

Overall, this study sought to determine if there was a statistically significant relationship between reading comprehension skills and the ability to solve word-problems in mathematics for the 10th-grade students of the Bukidnon National School of Home Industries. Additionally, this study aimed to describe students' levels of reading comprehension and mathematical problem-solving, examine the relationships between these

skills, and provide insight into the role of literacy in developing mathematical reasoning. Ultimately, the study hoped to make contributions to both the theoretical literature regarding cognitive learning processes and to the practical improvement of instructional approaches that develop students who are more well-rounded and better able to meet academic and real-world demands.

2. LITERATURE REVIEW

2.1. Schema Theory

According to Schema Theory, as developed by Anderson (1977), Mayer (1985), when a learner encounters a math word problem, they will activate a previously created or learned mental structure (schema) which will assist them in connecting their previous knowledge with the problem to be solved. The activated schema provides a means for the learner to link together the language in the problem and the numerical data so that they can determine which mathematical operation(s) should be used to solve the problem. Effective reading comprehension supports successful schema activation and problem representation, while ineffective reading comprehension does not support these processes and therefore may result in the learner's making an error in the solution to the problem.

Macas (2023); Bañez (2024); and Carpio and Dela Cruz (2023) have further developed this theory by finding that those students who comprehend text more effectively also have greater success with mathematical word problems due to the student having a clearer and more accurate representation of the problem to be solved through schema activation.

H1: A higher level of reading comprehension positively impacts a student's ability to successfully solve math word problems through enhanced schema activation and increased clarity of problem representation.

2.2. Polya's Problem Solving Theory

Problem Solving Theory, developed by PolyA (1945) is divided into four stages: understand, plan, execute, and review. Comprehension of the written portion of a word problem is critical in the first stage, i.e., understand, because comprehension determines the accuracy of a student's understanding of the problem and their ability to identify exactly what is being requested. Weak comprehension limits progress in each of the other three stages of problem solving as well and thus relates to total problem-solving effectiveness as related to reading skills.

As noted in several studies (Iilonga & Ogbonnaya, 2023; Bekele, 2016; Reyes & Bautista, 2019; Dela Cruz & Santos, 2023), comprehension of word problems is the primary source of difficulty for students to successfully solve word problems. Difficulty with comprehension results in errors and forces students to use memorization instead of reasoning to solve word problems.

H2: Students who demonstrate advanced reading comprehension abilities will perform better at each of the four stages of PolyA's problem solving model, particularly at the stages of understanding and planning.

2.3. Cognitive Load Theory

The Cognitive Load Theory (CLT) (Sweller, 1988) argues that the amount of working memory available to a learner has an upper limit, and if the number of elements presented exceeds that limit, then the learner will be unable to process each element effectively. In the case of solving math word problems, a poor reading comprehension would worsen the cognitive load that is already challenging the working memory by forcing the student to perform additional mental operations just to understand the words of the problem. Therefore, reading comprehension skills can have a significant positive impact on the cognitive load associated with math word problems and help students to use more of their working memory capacity for doing the math rather than for reading the problem.

There is a large body of research evidence supporting this claim that better reading comprehension leads to less mental effort and higher task accuracy when solving math word problems (e.g., Coyle et al., 2017; Zhang & Liu, 2018; Macas et al., 2025). Conversely, lower reading comprehension skills are associated with increased cognitive load, and thus, as a consequence, they can lead to produce incorrect or unreliable results.

H3: Higher reading comprehension levels lead to decreased cognitive load and thus, to increased accuracy, efficiency, and reasoning when solving mathematical problems.

2.4. Constructivist Learning Theory

Constructivist Learning Theory (Piaget, 1970; Vygotsky, 1978) explains that learners are active agents in the process of learning as they construct new knowledge by connecting their new experiences to the knowledge that they already have. In the case of solving math word problems, through reading comprehension students gain access to the content of the problem, they figure out which strategy to use, and they come up with the answer. The process of understanding the problem, strategy selection, and solution building is supported by teacher or peer guidance within the Zone of Proximal Development (ZPD).

Research (Francia & Dela Cruz, 2021; Cariño, 2022) has confirmed that the inclusion of literacy-based interventions, and scaffolding in the instructional design of math instruction enhances both reading comprehension and math problem-solving abilities in students.

H4: The use of reading strategies and scaffolding in the teaching of math enhances students' ability to comprehend and solve word problems.

This paper uses Schema Theory (Anderson, 1977; Mayer, 1985); Pólya's Problem-Solving Theory (Pólya, 1945); Cognitive Load Theory (Sweller, 1988); Constructivist Learning Theory (Piaget, 1970; Vygotsky, 1978); and Polyas' four-stage model (Pólya, 1945) to explain why students with good reading comprehension perform well in math word problems.

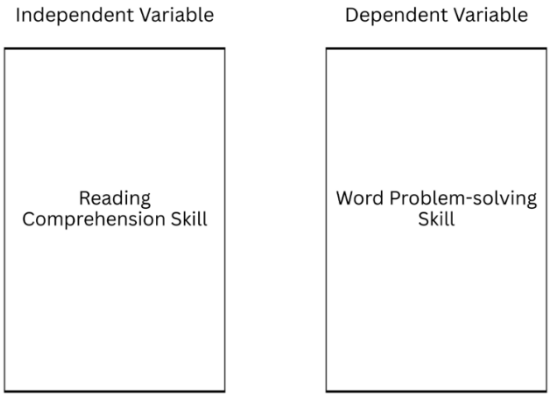

Figure 1. Conceptual Framework showing the relationship between reading comprehension skills and word problem solving skill in mathematics.

3. METHODOLOGY

Although this is a quantitative descriptive-correlative study investigating the relationship between the grade ten students' reading comprehension and their ability to solve math word problems at the Bukidnon National School of Home Industries (2019-2020), data will be collected in classrooms by employing standard and objective methods for collecting data.

A total of two validated testing instruments will be utilized as the basis for this study. The first instrument will be a reading comprehension test (adapted from Phil-IRI, 2007; based on Macas et al., 2025) that utilizes schema theory aligned reading passages. The second instrument will be a math word problem test (adapted from Campanilla & Mendoza, 2024) that assesses the students' problem-solving abilities in six different math areas. Each math problem will be scored using Polya's four-step method to provide a way to measure the students' math problem-solving abilities consistently and accurately.

Prior to collecting the data, the researcher obtained permission to conduct the study from the school administration. Before each testing session, the students signed an informed consent form prior to participating in the study. The testing took place during supervised and controlled classroom sessions in which the students completed both tests in sixty minutes or less to maintain the representativeness of the sample. A stratified random sampling technique was employed to select 261 of the 809 students who comprised the grade ten class to obtain a proportionate representation of all the different sections. Participation in the study was voluntary and the researcher adhered to the highest possible standards of ethics in conducting the study.

Descriptive statistics such as mean, frequency, percent, and standard deviation were used to summarize the students' data. To test the correlation between reading and math skills, Pearson's r was used at a .05 level of significance. Besides finding out if there was a significant correlation between the reading and math skills, the strength of the correlation was also figured out by means of common measures that signify the strength of the relationship between the two variables. The analyses' results illustrated the extent to which reading comprehension influenced math problem-solving. Moreover, to

ensure that the analyses' results were impartial and valid, all analyses were performed in a manner that guaranteed the results' validity, reliability, and accuracy.

4. RESEARCH RESULTS AND DISCUSSIONS

This section presents in detail the stepwise procedures and the analytical techniques that have been used to analyze the research results of the study "Reading Comprehension Skills and Word Problem-Solving Ability in Mathematics of Grade 10 Junior High School Students." The data gathered from 261 participants were handled systematically, summarized, and analyzed through the application of appropriate statistical tools. The following procedures were implemented:

4.1. Data Preparation and Validation

After the performance of the two research instruments—the reading comprehension test (adopted from Macas et al., 2025) and the word problem-solving test (adopted from Campanilla & Mendoza, 2024)—the researcher collected all of the responses, checked them for completion, and information of each respondent was inputted into a spreadsheet. Any entries that were invalid or incomplete were eliminated to ensure that the data were accurate and reliable.

4.2. Computation of Descriptive Statistics

Descriptive statistics such as frequency counts, percentages, means, and standard deviations were computed to determine the overall level of the respondents' reading comprehension and problem-solving skills. These statistics not only provided an overview of the students' performance but also helped in categorizing the results into different descriptive levels (i.e., Outstanding, Very Satisfactory, Satisfactory, Fair, and Poor).

Data Summarization through Tables and Charts Correlation Analysis

The condensed data were presented through tables and charts for a better understanding of the readers. Readers can quickly compare the key findings and interpret them visually at a glance.

Table 1. Frequency and percentage distribution of students' reading comprehension levels.

SCORE AND DESCRIPTIVE RATING	FREQUENCY	PERCENTAGE
13 – 15 (Outstanding)	43	16.48%
10 – 12 (Very Satisfactory)	68	26.05%
7 – 9 (Satisfactory)	93	35.63%
4 – 6 (Fair)	57	21.84%
1 – 3 (Poor)	0	0%
TOTAL	**261**	**100%**
	MEAN	9.11
	STANDARD DEVIATION	3.01

The highest number of students, 35.63%, received a "Satisfactory" reading comprehension rating; next was "Very Satisfactory," 26.05%; then "Outstanding," 16.48%. The fact that over three-quarters of the students received a satisfactory or very satisfactory reading comprehension rating indicates that while the majority of the students are able to understand what they read, a smaller percentage can understand it to a much greater extent. Therefore, there are many barriers that must be overcome before students can reach their potential.

In addition, 21.84% of the students had a "Fair" reading comprehension rating; however, no students received a "Poor" rating. Therefore, every student has a minimum amount of reading comprehension ability. The mean reading comprehension rating was 9.11, which is in the satisfactory category. The small standard deviation of 3.01 indicates that most of the students performed in a similar manner, thus suggesting that targeted interventions will likely be effective in helping students move past the satisfactory rating.

The findings presented here are consistent with schema theory (Anderson & Pearson, 1984). Schema theory states that reading comprehension occurs when the reader connects new information to prior knowledge. The majority of the students in this study were classified as satisfactory, which suggests that they are able to process information literally but are not processing the information to the same degree that would allow them to infer, synthesize, and critically evaluate the information.

Studies such as those of Supontawanit & Lertlit (2021) have supported the current results. For example, Supontawanit & Lertlit (2021) reported that although many students are able to process basic reading tasks, higher order reading comprehension tasks, such as making inferences and analyzing critically, are not developed to the same degree as those of basic reading. Similarly, Maico Amador et al. (2022) reported that many students interpret the material to a lesser degree because of a lack of comprehension of the material, resulting in failure to develop a deep understanding and to apply the material effectively. Additionally, Ersando et al. (2025) reported that many students' comprehension skills are at lower levels of Barrett's Taxonomy and therefore face challenges in developing higher order reading skills, specifically evaluative and critical reading. Together, these studies emphasize the necessity for educators to provide students with opportunities to develop higher order reading skills through instructional practices such as providing explicit instruction in reading strategies, using critical literacy activities, and using authentic and varied texts.

Table 2. Word problem-solving scores and descriptive ratings

SCORE AND DESCRIPTIVE RATING	FREQUENCY	PERCENTAGE
65 – 75 (Outstanding)	3	1.15%
55 – 64 (Very Satisfactory)	38	14.55%
45 – 54 (Satisfactory)	76	29.12%
35 – 44 (Fairly Satisfactory)	107	41%
0 – 34 (Did Not Meet Expectation)	37	14.18%
TOTAL	**261**	**100%**
	MEAN	42.48
	STANDARD DEVIATION	12.71

As seen in Table 2, approximately 70% of respondents were classified as either Fairly Satisfactory (41%), Satisfactory (29.12%), and Outstanding (1.15%). Thus, a larger percentage of students demonstrated a satisfactory level of problem-solving skill in analytical and problem-solving tasks, while a smaller percentage demonstrated an outstanding or very satisfactory level of problem-solving skills.

Furthermore, 14.18% of the respondents were classified as Unsatisfactory, indicating that a larger percent of students experienced challenges in problem-solving, compared to other skills. The average score of 42.48 represents the Fairly Satisfactory rating, and is indicative of the general performance being below the desired standard. The high standard deviation of 12.71 demonstrates the large variation in the learners' competence.

Recent research on problem-solving ability has provided supporting evidence to the current study. As an example, Ersando et al. (2025) indicated that many learners remained at lower levels of the Barrett Taxonomy, and thus have difficulty developing the higher order thinking skills required for mathematical problem-solving. Similar to the findings of Ersando et al. (2025), Maico Amador et al. (2022) indicated that the reading comprehension challenges that learners experience often result in the development of incorrect patterns when solving word problems, as learners may misinterpret or ignore key details. Consistent with the findings of Maico Amador et al., (2022), intervention studies conducted at the University of Kansas (2024), showed that the incorporation of literacy-based strategies into mathematics instruction resulted in improved performance in solving word problems for learners. Furthermore, Boctot, Enriquez, and Yurango (2025) identified comprehension as one of the strongest predictors of mathematical problem-solving ability.

Therefore, the findings of this study illustrate the need for teaching strategies that facilitate higher order thinking and analytical reasoning. Strategies such as problem-based learning, differentiated instruction, and targeted support for students who struggle can improve problem-solving skills and enable learners to move from satisfactory to superior performance.

Table 3. Correlation results between reading comprehension and problem-solving ability.

Variable	Mean	r-value	p-value	Interpretation	Decision
Reading Comprehension	9.11	0.6382	< .001	Moderate to strong positive correlation, statistically significant	Reject the null hypothesis.
Word-problem Solving	42.48				

Table 3 represents data of grade 10 students. The data suggests that a moderate to a strong positive relationship exists (r = 0.6382) between reading comprehension and the ability to solve word problems. Since the p-value is less than .001, statistical significance is observed. In this case, students with better reading comprehension are likely to obtain a higher score in word problems. Consequently, the null hypothesis is rejected by the data.

This result aligns well with research that is being conducted on this topic. According to Fuchs et al. (2019), both reading comprehension and problem-solving require the same cognitive and linguistic abilities. Goodrich et al. (2019) pointed out that vocabulary and decoding are the sources to both reading comprehension and word-problem performance. Cho et al. (2022) revealed in their research that difficulties in reading comprehension are accompanied by difficulties in solving word problems. Similar overlap was found in the current study. Moving further, Orellana et al. (2024) argued that reading comprehension is the major influencer of the performance in other subjects besides math at the academic level. Through intervention studies at the University of Kansas (2024), and the International Journal of Science and Research Archive (2024), it has been proven that focused instruction in reading comprehension enhances the performance of word-problem solving.

The data also reveal that the sample students possess reading skills which are adequate but only to a certain extent. Besides that, students' problem-solving skills are at a moderately satisfactory level. The significant positive relationship between the two variables implies that the students' comprehension skills have a direct effect on their performance in math-related contexts. Hence, the utilization of reading comprehension strategies in math teaching is imperative. Techniques like the explicit teaching of math vocabulary, contextualized problem-solving, and guided reading-to-learn activities not only help students to go beyond mere superficial comprehension, but also provide them with the higher order thinking skills. By focusing on both literacy and numeracy, the educators are able to enhance the students' understanding and achievement in not only the subjects across the curriculum, but also in other areas.

5. CONCLUSION AND RECOMMENDATION

Students' reading comprehension was generally good, with most students achieving a mean score of 9.11. Most students were able to read simple texts; however, they had difficulty doing more difficult things like inferring from information, putting pieces together and evaluating what they read.

The results for students' problem-solving abilities in mathematics showed that these abilities were "fairly satisfactory" based on a mean of 42.48. The fact that students were able to use their reading abilities to comprehend many basic mathematical word problems indicates that students are proficient at a basic level. However, the vast majority of students were unable to solve complex word problems in the form of planning, analyzing and implementing their solutions. These results show that students need extra help or support when confronted with more challenging problems.

There was a moderate to strong positive correlation (r = 0.6382), which was statistically significant (p < .001) between reading comprehension and problem-solving abilities in mathematics. These data indicate that students who have better reading comprehension skills are likely to have greater success in solving word problems in mathematics, therefore demonstrating the relationship between literacy and numeracy.

Teachers should instruct students in a variety of higher-order reading skills to assist them in developing a more comprehensive education. Examples of higher-order reading skills include explicitly teaching students how to infer, analyze critically and synthesize information. Teachers may also increase opportunities for students to engage in advanced levels of reading through using a wide range of reading materials, providing structure and support for complex reading activities and using various levels of support for advanced reading assignments.

Mathematics educators may assist students develop problem-solving skills by using systematic methods such as Polya's four steps: plan, execute, review and evaluate. Mathematics educators may also provide students with multiple opportunities to solve complex word problems and encourage students to use different strategies to solve problems such as visual aids

and step-by-step guides to develop reasoning and solution-finding skills.

Because there was a significant positive correlation between reading comprehension and solving word problems in mathematics, it would be beneficial for teachers to employ an integrated approach to reading and mathematics instruction. For example, teachers may use contextual reading to connect reading and mathematics, implement vocabulary development and have students interpret and guide problem-solution activities. Using these strategies will help teachers teach students both literacy and numeracy, which will help students succeed in all subject areas.

Future studies may repeat the current study and/or study related factors such as motivation, study habits and language proficiency. Experimental designs may be used to investigate the long-term impact of literacy-based interventions.

6. ADVANCE RESEARCH

Students from one school (Bukidnon National School of Home Industries) were selected for the study — only grade 10 — therefore there is limited generalizability to other students. Therefore, findings need to be viewed through that lens.

Variables including study habits, socioeconomic status, student learning style, and both intrinsic and extrinsic motivation for the subjects being researched were not examined in this study; future studies should examine those variables to gain an even better understanding of how they impact reading comprehension and problem solving in math.

Only students' cognitive performance was measured by standardized testing regarding reading comprehension and problem solving in math, not whether or not students had a positive attitude towards either of these subjects, nor what subjects students were interested in pursuing as academic paths. Potential future studies will likely include a combination of qualitative (i.e., classroom observations, interviews with students) and quantitative (standardized testing) methodologies to obtain a more complete picture of the context.

A correlational design was used to identify potential relationships between two variables; however, it did not allow the researcher to draw conclusions about causality between variables, therefore, if the researcher wants to determine the cause-and-effect relationship between variables, the researcher will want to use an experimental or longitudinal design in the future.

Future research will want to expand the number of schools or grades studied, as well as test new combinations of reading and math instruction to see what types of instructional practices improve reading comprehension skills and ability to solve word problems in math.

7. ACKNOWLEDGEMENT

The researcher extends here heartfelt thank to all the people who helped her during the study titled "Reading Comprehension Skills and Word Problem-Solving Ability in Mathematics of Grade 10 Junior High School Students."

The first thing to mention here is Jesus Christ. The researcher would like to thank Him and give Him all the honor for giving her His holy Spirit, wisdom, and strength during the whole academic experience and for making all things possible.

The researcher is also pleased to express her gratitude to her advisor, Mrs. Aprell, for her assistance and guidance that took very valuable time and effort. The researcher has been fortunate to have a chance to learn from Mrs. Aprell and would like to say thank you very much to her for her contribution.

The researcher is also very much obliged to the administration, the teaching staff, and the students of Grade 10 at Bukidnon National School of Home Industries for their cooperation and support during the data collection stage. The work of the researchers would not have been possible if they had not been helped and participated by them.

The researcher is also very much obliged to her parents, her friends, and her mentors, who have supported and motivated her throughout the study.

Apart from all the people listed above, the researcher acknowledges her commitment to education and the continuous personal development. Her commitment to learning has made this achievement possible, and this achievement is a reflection of her continued pursuit of excellence.

At last, but not least, the researcher would like to convey her deepest gratitude to all those who have provided her any support, be it through advice, help, or encouragement, and in any manner.

REFERENCES

[1]. Afflerbach, P., Cho, B.-Y., & Kim, J. Y. (2016).
a. Understanding adolescent reading comprehension: Insights from international research. *Reading Research Quarterly, 51*(2), 139–158. https://doi.org/10.1002/rrq.130

[2]. Adviento-Rodulfa, C., & Lopez, M. R. S. (2022).
a. Paired reading strategy and comprehension level among Grade 10 students. *World Journal of English Language, 12*(1), 104.

[3]. Akin, A. (2022). The relation between reading
a. comprehension and mathematics skills: A meta-analysis study. *International Journal of Instruction, 15*(1), 51–68. https://files.eric.ed.gov/fulltext/EJ1352321.pdf

[4]. Alpitche-Bunda, J., & Pineda, R. D. (2023). Reading
a. difficulties and reading strategies of Grade 10 students in the new normal. *International Journal of Social Science and Human Research, 6*(3), 1376–1382.

[5]. Bañez, C. D. (2024). Reading comprehension and
a. problem-solving ability in mathematics of Grade 10 students: A correlational study. *Philippine Educational Measurement Journal, 22*(6), 112–125. https://ejournals.ph/article.php?id=27954

[6]. Bekele, G. (2016). Mathematics problem-solving
a. skills of Grade 10 students in Jimma Zone. *I nternational Journal of Basic and Applied Sciences, 2*(1), 80–90. https://www.researchgate.net/publication/338005730_Mathematics_Problem_Solving_Skills_of_Grade_10_Students_in_Jimma_Zone

[7]. Cabansag, R. (2024). Reading comprehension level
a. and problem-solving ability in mathematics of Grade 10 students. *Philippine E-Journals.* https://ejournals.ph/function/reader1/read2/web/reader.php?id=uploads%2Farchive%2FPEMJ%2FVol.+22+No.+6+%282024%29%2FArticles%2FArticle+7.pdf&di=27954

[8]. Cabural, A. B., & Infantado, E. J. S. (2023). The
a. difficulty of reading comprehension and the proficiency of the Grade 10 students of Aloran Trade High School, Philippines. *Journal of Tertiary Education and Learning, 1*(2), 23–29.

[9]. Cariño, M. A. (2022). Leveling up the problem-
a. solving skills of Grade 10 learners I n mathematics through QuickVid. *Department of Education–Cordillera Administrative Region.*

[10]. Carpio, J. R., & Dela Cruz, M. L. (2023). Investigating the relationship of
a. reading comprehension on the solution processes of mathematical word problems. *ResearchGate.* ON_PROCESSES_OF_MATHEMATICAL_WORD_PROBLEMS

[11]. Coyle, T. R., Snyder, A. C., & McNamara, D. S. (2017).
a. Reading comprehension and problem solving in mathematics. *Journal of Educational Psychology, 109*(2), 234–246.

[12]. Creswell, J. W., & Creswell, J. D. (2018). *Research*
a. design: Qualitative, quantitative, and mixed methods approaches (5th ed.). SAGE Publications.

[13]. Cua, M., De Leon, S., & Trance, N. (2024). Reading
a. comprehension and performance in mathematics of Grade 9 students in a science high school. *Philippine E-Journals.* https://www.researchgate.net/publication/379033720

[14]. De la Cruz, M. R., & Fernandez, P. L. (2019). The
a. relationship between mathematical reasoning and word problem solving of Grade 10 students in Metro Manila. *Philippine Journal of Mathematics Education, 45*(2), 55–68.

[15]. Duldulao, W. G., & Gamiao, B. A. (2021). Reading

a. comprehension levels and metacognitive strategies of Grade 10 students: Their implications to the teaching of reading in the senior high school. *International Journal of Research in Academic World, 1*(10), 1–11. https://academicjournal.ijraw.com/media/post/IJRAW-1-10-9.1.pdf

[16]. Francia, M. G. D., & Dela Cruz, J. N. (2021). Project
a. 53: Improving the level of performance in answering mathematical word problems of Grade 10 Love learners. *International Journal of Advanced Multidisciplinary Studies, 1*(3), 60–67.

[17]. Iilonga, H. K. (2023). Grade 10 learners' problem-
a. solving skills and strategies in algebraic word problems (Master's dissertation, University of Pretoria). *University of Pretoria Repository.* https://repository.up.ac.za/items/bcd16054-d007-493e-8341-957022aafd91

[18]. Macas, M. C. S. (2023). Examining the relationship
a. between reading comprehension and wor d problem-solving skills among Grade 10 students. *ResearchGate.* https://www.researchgate.net/publication/389256033_Examining_the_Relationship_Between_Reading_Comprehension_and_Word_Problem-Solving_Skills_Among_Grade_10_Students

[19]. Macas, M. C. S., Alarcon, F. S. L., Goma, D. E. Jr.,
a. Inductivo, J., Ortega, C. A., & Sabidra, R. M. D. (2025). Examining the relationship between reading comprehension and word-problem solving skills among Grade 10 students. *International Journal of Open-Access, Interdisciplinary & New Educational Discoveries, 4*(1), 258–270.

[20]. Mayer, R. E. (1985). Implications of cognitive
a. psychology for instruction in mathematical problem solving. In E. A. Silver (Ed.), *Teaching and learning mathematical problem solving: Multiple research perspectives* (pp. 123–138). Lawrence Erlbaum Associates.

[21]. Özsoy, G., Kuruyer, H., & Çakıroğlu, A. (2021).
a. Evaluation of students' mathematical problem-solving skills in relation to reading comprehension and problem-solving achievement. *International Electronic Journal of Elementary Education, 13*(4), 441–458. https://files.eric.ed.gov/fulltext/EJ1364296.pdf

[22]. Parilla, K. A. (2024). Reading comprehension and
a. writing competence among Grade 10 students. *International Journal of Research Publications, 152*(1), 41–54.

[23]. Piaget, J. (1970). *Science of education and the*
a. *psychology of the child.* Orion Press.

[24]. Polya, G. (1945). *How to solve it: A new aspect of*
a. *mathematical method.* Princeton University Press.

[25]. Rahmawati, R., & Prastyo, T. (2021). Correlation
a. between reading comprehension and mathematics achievement of senior high school students. *International Journal of Educational Research Review, 6*(2), 123–134. https://d1wqtxts1xzle7.cloudfront.net/92406591/2116-libre.pdf

[26]. Reyes, A. D., & Bautista, P. J. (2017). The level of
a. reading comprehension skills of Grade 10 students in private schools in the Philippines. *Philippine Journal of Education, 95*(1), 45–60.

[27]. Reyes, A. D., & Bautista, P. J. (2019). Correlational
a. study on reading and mathematical problem-solving skills of senior high school students. *Philippine Journal of Education, 96*(2), 67–82.

[28]. Santos, J. P. (2017). Mathematics word problem-
a. solving skills of senior high school students. *Asia Pacific Journal of Education, 37*(4), 501–514. https://doi.org/10.1080/02188791.2017.1365224

[29]. Smith, A., & Johnson, L. (2020). Assessing algebra

a. word problem-solving skills of tenth grade students. *Journal of Adolescent & Adult Literacy, 63*(3), 345–357. https://doi.org/10.1002/jaal.1065

[30]. Sweller, J. (1988). Cognitive load during problem

a. solving: Effects on learning. *Cognitive Science, 12*(2), 257–285. https://doi.org/10.1207/s15516709cog1202_4

[31]. Vygotsky, L. S. (1978). *Mind in society: The*

a. development of higher psychological

b. processes. Harvard University Press.