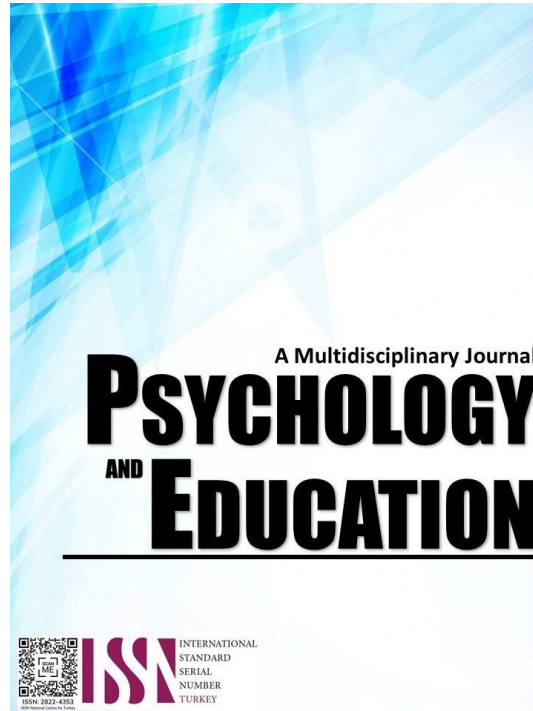


# ASSESSING THE CORRELATION BETWEEN READING COMPREHENSION AND PROBLEM-SOLVING SKILLS OF GRADE 10 STUDENTS



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## Assessing the Correlation Between Reading Comprehension and Problem-Solving Skills of Grade 10 Students

Marie Josephine U. Cabansag\*

For affiliations and correspondence, see the last page.

### Abstract

This research assessed the relationship between Grade 10 students' reading comprehension and problem-solving skills of Grade 10 students at D.T. Durano Memorial Integrated School in Danao City Division for the school year 2022-2023 as the basis for an action plan. The data gathered were treated using frequency count, percentage, and Pearson's  $r$ . Using a descriptive-correlational research design, 166 high school students at D.T. Durano Memorial Integrated School were surveyed using a questionnaire to collect data for the study. The correlation between reading comprehension and problem-solving skills was statistically significant. The null hypothesis was therefore refuted, and the research hypothesis was confirmed. This suggests that students with higher reading comprehension are more adept at solving problems. In addition, most respondents demonstrated acceptable reading comprehension and problem-solving skills. Most parents are high school graduates, and most respondents combined monthly family income is below PHP 10,000. This study's findings have significant implications for educators and policymakers in developing and implementing reading comprehension and problem-solving instruction. In addition, this research contributes to the literature regarding the relationship between reading comprehension and problem-solving skills.

**Keywords:** *teaching mathematics, reading comprehension, problem-solving skills, descriptive-correlational*

### Introduction

Mathematics is a key subject in school. It helps solve complex science, technology, engineering, and financial difficulties. Calculating bills and budgets, investing, and choosing a job all need math. Early arithmetic education is also vital. Mathematics is essential in many aspects of life. Calculating expenses, planning budgets, selecting, and cooking all need math. Engineers, architects, financiers, doctors, and technologists will utilize it. Mathematical principles underlie buildings, bridges, roads, and computers. Finance insurance and manufacturing use math to assess data and predict consequences. Data analysts use math to evaluate massive amounts of data and draw conclusions.

Many students struggle with real-world math, complex formulas, and abstract concepts. Math anxiety hinders arithmetic learning. Tension, fear, and avoidance may make arithmetic instruction tough. Students overcome math fear with good education and assistance. "Encouraging learning environments may reduce math anxiety and boost confidence. Many professions need math. Students may advance academically and professionally with math skills

To answer word problems, students must first convert a real-life occurrence into a mathematical language. According to previous studies, many students fail to grasp word problems, locate relevant information, and pick the right mathematical approach. Students fail to grasp mathematics word problems, according to many researchers. Many students fail to grasp and solve the challenge. Students may misread the subject or overlook essential information, making the assignment tougher. Word problems require students to recognize context and apply mathematical principles, which may explain why they struggle to understand what they read.

To solve word problems, pupils must enhance their reading comprehension. Mathematical problem-solving demands good reading comprehension. Elleman and Oslund (2019) argue mathematical success depends on reading comprehension (p. 3). Math success includes solving word problems. They may struggle to choose a mathematical technique. Reading comprehension's effect on grade 10 arithmetic problem-solving must be explored. Student problem-solving matters. Academic and professional success need problem-solving abilities. Problem-solvers may lose interest in school, lowering motivation and performance. Problem-solving skills improve academic achievement and job opportunities.

Poor readers struggle with problem-solving. Non-readers will have difficulties comprehending and solving most issues. Frustration and disengagement may reduce problem-solving abilities. Reading comprehension improves math and scientific problem-solving.

Reading comprehension and problem-solving abilities must have examined to determine pupils' strengths and shortcomings. Teachers may then assist students in growing and flourishing. Understanding textbooks, class notes, and other educational materials require reading comprehension. Poor readers may struggle to comprehend word problems and other math ideas, resulting in poor problem-solving. Arithmetic and other topics need problem-solving skills. Data analysis, conceptual connections, and replies may be complicated for students lacking problem-solving abilities. Reading comprehension and problem-solving may assist instructors in assessing students' strengths and limitations. These may need more reading materials, comprehension abilities, and ability-appropriate problem-solving.

Research supports cognitive load and social cognitive theories. Regulating cognitive load enhances learning since people have limited mental resources to process information, according to the Cognitive Load hypothesis (Sweller, 2019). Reading comprehension is

affected by complexity and past knowledge. This study follows cognitive load theory. In Social Cognitive Theory, observation, imitation, and modeling are crucial. This notion claims that seeing others handle difficulties might teach you. According to the Social Cognitive Theory, students' exposure to problem-solving actions and consequences may impact their performance.

DepEd Order 036, s. 2021 authorizes face-to-face COVID-19 instruction in low-risk locations. Lectures, dialogues, and hands-on activities would be used in face-to-face learning under the DepEd directive to accommodate different learning styles and enhance results. Instructors must observe safety standards and educate properly. They follow, comment, and modify their instruction. Attend class frequently, participate in class discussions and activities, complete homework, and ask for assistance. Students should also respect their instructors and be enthusiastic about learning. So, the DepEd decision reinstates face-to-face learning in low-risk settings with rules and restrictions. Students and instructors must optimize learning and safety in blended learning.

The Philippine Constitution, which grants every Filipino the right to quality education, serves as the legal foundation for this study. In addition, the K-12 Basic Education Program and the Enhanced Basic Education Act of 2013 require the government to ensure that every Filipino child has access to a quality education that includes the development of critical thinking, reading comprehension, and problem-solving abilities.

The legal foundation bolsters the study by highlighting the significance of education in fostering national development and individual well-being. It provides a framework for analyzing the relationship between reading comprehension and problem-solving abilities within the educational system of the Philippines. The legal foundation can be used to evaluate the efficacy of government policies and programs in fostering the academic development of students.

In addition, the legal basis can help contextualize the findings and recommendations of the study within the broader social and political context of the Philippines. The study can examine how education policies, such as the DepEd directive on face-to-face COVID-19 instruction in low-risk locations, impact students' reading comprehension and problem-solving skills, and how these skills contribute to the development of the nation.

Furthermore, the study's legal foundation provides a legal and conceptual basis for analyzing the relationship between reading comprehension and problem-solving abilities of grade 10 students in the Philippines. It provides a framework for analyzing the effectiveness of education policies and programs and contextualizes the study's findings and recommendations within the larger social and political context of the Philippines.

Reading comprehension is understanding and interpreting written content (Öztürk et al., 2020). The research found that Turkish students' non-routine mathematics problem-solving abilities will positively correlate with reading comprehension. It could be because reading comprehension abilities assist students in understanding and analyzing difficulties, which helps them apply mathematical ideas and solve problems. Reading comprehension influences word problem-solving, and maths and reading are closely related (as cited by Derya, 2020).

Hadianto et al. (2021) examined how reading comprehension affects mathematical word problem-solving. Sixty high schoolers took reading comprehension and arithmetic word problem tests that were positively correlated. According to a study, reading comprehension improves math word problems. The research also implies that instructors may employ reading comprehension tactics to enhance students' mathematical word problem-solving.

Moreover, Harangus (2019) study examined Sapientia University first-year students' problem-solving abilities and their relationship with reading comprehension and writing. Problem-solving abilities and reading comprehension and writing skills are strongly correlated. Many students tried to complete the challenging assignments, but only a few could properly grasp and solve them.

PISA tests 15-year-olds' arithmetic, reading, and science skills and application. Robust education systems, fair access, and high standards help East Asian and European nations score well in math and reading year after year. Vietnam has made tremendous gains in these areas, although countries with weaker economic status or education systems tend to fare worse.

On the other hand, the Philippines scored 78th in reading and 78th in math. The country's results in both subjects were substantially lower than the average of participating nations. The PISA findings showed that just 4.9% of 15-year-old Filipino pupils obtained competence level 2 in reading, the basic ability level needed for full social participation. 7.8% of math students earned competence level 2. The Philippines' poor student performance may be due to a lack of education funding, teacher training and professional development, resources, infrastructure, and socioeconomic problems, including poverty and inequality. Recent education reforms in the Philippines have addressed the need to enhance the system. However, considerable obstacles persist, and additional work and investment are required to strengthen education and student math and reading performance.

Similarly, Filipino children's arithmetic scores have dropped during the previous decade. Recent research studied the association between reading comprehension and math achievement in 666 first-year students from 18 public and private high schools.

Lastly, Jordan and Sunico (2022) examine how an integrated approach affects Grade 7 students' reading comprehension and arithmetic problem-solving. The experimental group got integrative training, whereas the control group received conventional education. Pre- and post-tests assessed intervention efficacy. The integrated approach dramatically enhanced students' performance in both disciplines.

In conclusion, the discussion has provided a comprehensive evaluation of relevant literature and research that give a solid basis for understanding the connection between reading comprehension and the ability to solve problems. The Cognitive Load and Social Cognitive Theory provide a theoretical framework for investigating this connection. The provided research shed light on how critical it is to hone reading comprehension and problem-solving abilities to achieve academic achievement and will have prepared for a profession in the future. The various results and techniques of the studies mentioned may serve as a reference for this study in devising effective interventions and strategies to promote students' reading comprehension and problem-solving abilities. In general, this analysis of relevant literature and research highlights how important it is for educational practices to have a holistic approach that encourages the development of analytical and deductive reasoning abilities in students.

The researcher emphasizes the significance of an interdisciplinary approach to education that fosters the growth of students' analytical and deductive reasoning skills. This strategy is consistent with the legal foundations for the study, specifically, DepEd Order 036, section 2021, which permits COVID-19 instruction in low-risk settings. The DepEd directive encourages the use of various teaching strategies, such as lectures, dialogues, and hands-on activities, to accommodate various learning patterns and improve learning outcomes.

This study's theoretical framework, which is based on the Cognitive Load Theory and the Social Cognitive Theory, lends credence to the idea that reducing cognitive load and making students more aware of the actions they can take to solve problems, as well as the repercussions of those actions, might improve the performance of students. By emphasizing the need to maximize learning and safety in integrated learning, these theories align with the legal bases supporting the study.

Overall, the legal bases supporting the study and the theoretical framework provide a sound basis for the researcher's investigation into the relationship between Grade 10 students' reading comprehension and problem-solving skills. The proposed action plan, developed based on the investigation findings, can improve students' academic performance and prepare them for future careers.

Based on the information above, the researcher plans to investigate the link between reading comprehension and problem-solving skills of Grade 10 students at D. T. Durano Memorial Integrated School, Danao City Division, in the current blended learning mode. The researcher is interested in this issue to determine whether there is a connection between the tenth graders' reading ability and their level of mathematical knowledge. A proposed action plan will be developed based on the investigation's findings.

## Research Questions

This study examined Grade 10 students at D.T. Durano Memorial Integrated School in Danao City, Division, for the 2022–2023 school year. In particular, the purpose of this research was to find answers to the following sub-problems:

1. What is the profile of respondents in terms of:
  - 1.1. age and gender,
  - 1.2. parents' highest educational attainment, and
  - 1.3. combined family monthly income?
2. What is the level of the reading comprehension skills of the respondents?
3. What is the level of problem-solving skills of the respondents?
4. Is there a significant relationship between the respondents' reading comprehension and problem-solving skills?
5. Based on the findings, what action plan may have been proposed?

## Methodology

### Research Design

This study's descriptive correlational design was a quantitative research method that collected and analyzed data to describe and identify variable relationships. According to Fisher and Bloomfield (2019), the descriptive correlational research design is a quantitative research approach that gathers and analyses data to describe and find variable relationships. This design enables the researcher to investigate the relationship between grade 10 students' reading comprehension and problem-solving abilities. This research emphasized the application of convergent thinking over the use of divergent reasoning in its methodology.

This design intended to ascertain the relationship between grade 10 students' reading comprehension and problem-solving abilities. Students' reading comprehension and problem-solving skills were evaluated using standardized tests to collect data. Students' demographic information, including age, gender, highest parental educational attainment, and monthly family income, was also collected. The study employed stratified random sampling to eradicate sampling bias, giving each student an equal opportunity to participate. The strata were defined based on pertinent characteristics, such as reading proficiency level measured by the ORV. Using statistical formulas, the sample size for each stratum was determined proportionally to its quantity in the population. Examining the relationship between reading comprehension and problem-solving abilities, the data were analyzed using statistical techniques such as correlation analysis. In addition to descriptive statistics, statistical tools such as SPSS were used to summarize the data, ensuring that the data analysis was accurate and efficient.

## Respondents

Students in grade 10 were selected as study participants because they are at a pivotal point in their academic development as they move from elementary school to senior high school. Due to school closings and other disruptions to typical classroom instruction, the pandemic has profoundly impacted the educational system. Due to the abrupt switch to online or modular learning, many students have seen a deterioration in their reading comprehension and problem-solving skills. For the academic year 2022–2023, students in grades 7–10 took the Oral Reading Verification (ORV) test. The test was given twice: once as a pre-test at the start of the academic year (PRE) and once as a post-test at the conclusion of the year (POST). The test was designed to evaluate the students' reading abilities in terms of their capacity for fluent and comprehension-based reading.

In Table 1, the distribution of respondents will be the grade 10 students composed of 5 sections (Dedicated, Diligent, Discreet, Determined, and Decisive). The sample size will be selected using a random stratified sampling method. The total number of 10th-grade students at the school is 235.

Table 1. *Distribution of the Respondents*

<i>Section</i>	<i>N</i>	<i>n</i>	<i>%</i>
Dedicated	49	31	20.95
Diligent	46	29	19.59
Discreet	46	29	19.59
Determined	46	29	19.59
Decisive	48	30	20.27
Total	235	148	100.00

The reading levels of the grade 10 students before and after the ORV test were shown in the data. The test evaluates their level of independence, instructional ability, frustration, syllabic reading, and syllabic reading in addition to their ability to read fluently and with comprehension. According to the data, 118 male and 117 female students sat the exam. Both male and female students have the same number of participants. While 26 male and 27 female students demonstrated the same level of reading after the test, before the test, 14 male and 14 female students could read fluently and with understanding. Meanwhile, 48 male and 62 female students could read fluently but with poor comprehension before the test, while 30 male and 14 female students had the same reading level after the test. It is also worth noting that no students were classified as non-readers or syllabic readers before or after the test.

Based on these results, it was necessary to conduct further research on the reading comprehension of grade 10 students, particularly their ability to read fluently with good understanding. This research could help identify specific areas of weakness and provide targeted interventions to improve their reading skills. Furthermore, it can also be related to their problem-solving skills since reading comprehension was essential in solving problems.

## Instruments

This research were utilized an adapted test that measures reading comprehension and problem-solving skills. The test were comprised three parts: the first were assessed the demographic profile, the second were determined the student's reading comprehension skills, and the third were assessed their problem-solving skills. The second part of the test consisted of reading passages followed by questions related to the selection. The courses will have taken from various sources, including textbooks, journals, and newspapers. The questions will range from simple recall questions to more complex inference and interpretation questions. The students will answer the questions by selecting the correct answer from a list of choices provided.

The third part of the test assessed the students' problem-solving skills. This section will consist of word problems related to real-world scenarios that require the students to apply critical thinking and problem-solving skills. The problems will have taken from various sources, including textbooks, worksheets, and other educational resources. The students will answer the questions by choosing the correct answer and showing their solutions and reasoning in the space provided.

The instrument used in this study is adapted from the Philippine Informal Reading Inventory (Phil-IRI) to measure reading comprehension and a teacher-made questionnaire to measure problem-solving skills. The instrument has been validated and proven reliable in assessing students' reading comprehension and problem-solving skills.

## Procedure

The data gathering procedure for this study were divided into three stages: the Preliminary Stage, Data Gathering Stage, and Post Data Gathering Stage.

**Preliminary Stage.** In the Preliminary Stage, the necessary permissions and approvals were obtained from the Cebu Technological University Institutional Review Board, the Dean of the School of Education, the Principal of D.T. Durano Memorial Integrated School, the Public Schools District Supervisor, and the Schools Division Superintendent of DepEd Division of Danao City. A Parental Consent form were also developed to informed and seeked the consent of the parents or guardians of the grade 10 students included in the study.

**Data Gathering Stage.** In the Data Gathering Stage, the researcher administered the survey questionnaire to the grade 10 students of D.T. Durano Memorial Integrated School. A stratified random sampling technique was used to select the participants from the population of grade 10 students. The researcher personally distributed and collected the questionnaires to ensure the completeness and accuracy of the data gathered. The survey questionnaire included items that measured the respondents' reading comprehension and problem-solving skills.

**Post Data Gathering Stage.** In the Post Data Gathering Stage, the gathered data were encoded, organized, and analyzed using statistical tools such as percentage, frequency count, mean, standard deviation, and Pearson's *r*. The analysis was focused on the correlation between the reading comprehension and problem-solving skills of grade 10 students. The study's results were presented clearly and concisely through tables and interpretations. Finally, the researcher concluded and provided recommendations based on the study's findings.

### **Data Analysis**

For this investigation, a wide range of statistical methods were used to analyze the data gathered and percentages to calculate the proportion of the total respondents who belong to a particular group. This statistical tool helped illustrate the distribution of the data, making it much simpler to comprehend the patterns and trends included within the data.

In the second step of the process, a frequency count will have carried out to determine the total number of respondents who fall into the same group. This statistical instrument will help count the number of times a particular answer happens, so presenting a summary of the data in condensed form.

Lastly, the mean was utilized to assess the respondents' abilities in terms of their reading comprehension and their ability to solve problems. This statistical tool computed the average of a data collection, giving a measure of central tendency that will help characterize the data. Moreover, the device will calculate the standard deviation of the data set.

In the end, Pearson's *r* correlation coefficient was utilized to investigate whether or not there was a substantial connection between problem-solving abilities and reading comprehension. This statistical tool assessed the strength and direction of the linear relation between two variables, indicating the degree to which the two variables are connected. It measured the power of the linear relationship and the direction in which it points. Pearson's *r* correlation coefficient is a statistical tool often used in correlational investigations, making it a good tool for this investigation because of its widespread application. These statistical techniques were utilized to give a complete analysis of the data gathered. This analysis allowed the researcher to make relevant conclusions from the study that will have been conducted.

### **Ethical Considerations**

#### *Confidentiality Pledge*

The researcher assures the confidentiality of the information obtained about the participant's personal information and agrees not to make it public. The following actions were ensured these codes were substituted for respondents' names. When the sheet containing the names of the participants is no longer necessary for the research, it must be removed, saved, or destroyed. The researcher must have access to the code master list. To ensure data security, study data files must be password-protected and encrypted.

#### *Authorization to Access Private Information*

The Data Privacy Act of 2012, Republic Act 10173, protects respondents' and study participants' data and information, so the CTU Research Committee must approve any access, transport, or copying.

### **Results and Discussion**

This section analyzed and interpreted the study's data to establish the respondents' age, gender, parents' highest education, and combined monthly family income. Reading comprehension and problem-solving skills were also tested. Reading comprehension's substantial association with problem-solving was also explored.

Using the responses to the survey questionnaire provided to the respondents, the following results and conclusions were presented and discussed:

#### **Profile of the Respondents**

This part provides a profile of the respondents, including information regarding their ages and the genders of those who responded. The results of this profile, depending on the data that was gathered, are included below.

#### **Age and Gender**

The age and gender distribution of the respondents to the study on the relationship between grade 10 reading comprehension and problem-solving abilities is shown in Table 2. In research studies, it is essential to consider the age and gender of the participants, as they may impact the results and generalizability of the findings. The table displays the number and percentage of female and male

pupils in various age categories, which can shed light on the characteristics of the sample population and potential differences in performance based on age and gender.

**Table 2. Age and Gender of the Respondents**

Age (in years)	Female		Male		Total	
	f	%	f	%	f	%
18 and above	5	3.01	8	4.82	13	7.83
16-17	54	32.53	44	26.51	98	59.04
14-15	28	16.87	27	16.27	55	33.13
Total	87	52.41	79	47.59	166	100.00

Based on Table 2, the study consists of 166 Grade 10 students, 87 (52.41%) of whom are female and 79 (47.59%) male. In addition, the respondents were divided into three age groups: 14–15 years (33.13%), 16–17 years (59.04%), and 18 years and older (7.83%). Male respondents had the highest percentage in the same age range (26.51%), while female respondents had the highest rate in the 16–17 age range (32.53%). A study by Zhang et al. (2021) indicated that Chinese middle school pupils' reading comprehension and problem-solving abilities had a good link, which validates the research findings. Like the current study, the researchers examined data from a sizable sample of Grade 10 pupils. Since reading comprehension and problem-solving abilities are positively correlated, the results of the present study will be congruent with those of Zhang et al. and Grade 10 students.

### Parents' Highest Educational Attainment

The data presented in Table 3 reveal the greatest level of education attained by the parents of the 166 individuals who participated in the research.

**Table 3. Parents' Highest Educational Attainment**

	f	%	f	%
Post-graduate	1	0.60	1	0.60
College Graduate	27	16.27	27	16.27
College Level	22	13.25	20	12.05
High School Graduate	66	39.76	43	25.90
High School Level	18	10.84	15	9.04
Elementary Graduate	13	7.83	19	11.45
Elementary Level	18	10.84	28	16.87
No Response	1	0.60	13	7.83
Total	166	100.00	166	100.00

Table 3 details the most significant level of education attained by the parents of the grade 10 students included in the study. According to the data, 39.76% of mothers have a high school diploma, followed by college graduates (16.27%) and college level (13.22%). In contrast, the highest educational attainment of fathers is more evenly distributed, with 25.90% having completed high school, 16.87% having completed elementary school, and 16.20% having completed college. Previous studies (Aysel, Ates. (2021) indicate that there is a connection between parental involvement in a child's educational experience and the level of academic success that the child experiences. Students with parents who have higher educational attainment are more likely to demonstrate superior reading comprehension and problem-solving abilities, according to the current study.

### Combined Family Monthly Income

Table 4 presents data on the combined monthly income of the families of the 166 respondents in the study. The table is arranged in rows according to the monthly income categories and in columns with the frequency of the respondents and the percentage of the total sample they represent.

**Table 4. Combined Family Monthly Income**

<i>(in pesos)</i>			
	f	%	
Above 30,000	13	7.83	
25,001-30,000	6	3.61	
20,001-25,000	0	0.00	
15,001-20,000	12	7.23	
10,001-15,000	24	14.46	
5,001-10,000	49	29.52	
Below 5,000	62	37.35	
Total	166	100.00	

Table 4 presents the average monthly household income of the students who participated in the survey and were in grade 10. 37.35% of the respondents have a monthly income that is less than 5,000 pesos, whereas 29.52 % of the respondents have a monthly income that is between 5,001 and 10,000 pesos. 11.44% of those who participated in the survey have a monthly income that is greater than

20,000 pesos, 14.46% of those who participated have a monthly income that is between 10,001 and 15,000 pesos, and 7.23% have a monthly income that is between 15,001 and 20,000 pesos. The researchers may use the data in Table 4 to investigate the association between family income and students' reading comprehension and problem-solving skills. According to prior research, socioeconomic status (SES) may impact students' academic performance and educational outcomes (Yeager et al., 2018). Previous research indicates that students from higher-income families are more likely to demonstrate superior academic performance in reading comprehension and problem-solving skills.

### Level of Reading Comprehension Skills of the Respondents

Table 5 shows the level of reading comprehension skills of the respondents, as measured by their scores in a reading comprehension test. The test scores were grouped into five levels: Outstanding (21-25), Very Satisfactory (16-20), Satisfactory (11-15), Fairly Satisfactory (6-10), and Poor (0-5).

Table 5. *Level of Reading Comprehension Skills of the Respondents*

Level	Range of Scores	f	%
Outstanding	21-25	1	0.60
Very Satisfactory	16-20	23	13.86
Satisfactory	11-15	52	31.33
Fairly Satisfactory	6-10	75	45.18
Poor	0-5	15	9.04
<b>Total</b>		<b>166</b>	<b>100.00</b>
Mean		10.34	
St. Dev.		3.99	

Based on the respondents' range of scores, Table 5 displays the respondents' degree of reading comprehension. The findings show that the majority of respondents had reading comprehension skills that are fairly satisfactory, with 75 respondents (or 45.18%) scoring in the range of 6 to 10, 52 respondents (or 31.33%), and 23 respondents (or 13.86%) having very satisfactory reading comprehension skills. 0.60% of respondents, or one, had exceptional reading comprehension abilities. However, 15.04 percent of respondents 15 have weak reading comprehension abilities.

The average response was 10.34, with a 3.99 standard deviation. These findings indicate that although there is an extensive range in the respondents' performance, their reading comprehension abilities are typically average. This result aligns with earlier studies that show a wide range of students' reading comprehension abilities (Maharani, Putri. (2019)).

According to the results of this study, it is essential to improve the reading comprehension skills of the respondents, particularly those whose scores fell between 0 and 10. This can be accomplished by putting in place student-specific reading comprehension treatments. Prior studies by James Carroll Hill (2020) have shown that targeted interventions can enhance students' reading comprehension abilities. Of the 166 respondents, only one (0.60%) obtained an Outstanding score, while 23 (13.86%) obtained a Very Satisfactory score. More than half of the respondents (52 or 31.33%) got a Satisfactory score, followed by 75 (45.18%) who obtained a Fairly Satisfactory score. The remaining 15 respondents (9.04%) got a Poor score.

The respondents' mean score on the reading comprehension test was 10.34, with a standard deviation 3.99. This indicates that, on average, the respondents had a Fairly Satisfactory level of reading comprehension skills but with a relatively large variation in scores.

### Level of Problem-Solving Skills of the Respondents

Table 6 shows that the majority of grade 10 students in the study have satisfactory problem-solving skills (63.86%), followed by those with fairly satisfactory skills (18.07%), very satisfactory skills (16.27%), outstanding skills (0.60%), and poor skills (1.20%). The mean score for problem-solving skills is 15.19, indicating that students have an average problem-solving ability. This study's findings corroborate previous research of Anuradha, Ghatak., Kavita, Mittal. (2019) that problem-solving skills are a crucial aspect of academic achievement. Problem-solving solid abilities can help students succeed in academic and real-world settings. Educators must provide students with opportunities to develop and improve their problem-solving skills. Educators can integrate problem-based learning activities and games into their lessons to foster problem-solving skills in students (Nworie & Osuagwu, 2020).

In general, this study's findings indicate that grade 10 students have good problem-solving skills, but there is still space for improvement. By implementing problem-solving strategies, educators can assist students in becoming more effective problem-solvers and achieving more tremendous academic success.

Table 6. Level of Problem-Solving Skills of the Respondents

Level	Numerical Range	f	%
Outstanding	25-30	1	0.60
Very Satisfactory	19-24	27	16.27
Satisfactory	13-18	106	63.86
Fairly Satisfactory	7-12	30	18.07
Poor	0-6	2	1.20
<b>Total</b>		<b>166</b>	<b>100.00</b>
<b>Mean</b>			<b>15.19</b>
<b>St. Dev.</b>			<b>3.60</b>

### Test of the Relationship between Reading Comprehension and Problem-Solving Skills of the Respondents

Table 7 presents the results of a test of the relationship between the respondents' reading comprehension and problem-solving skills. The table shows the correlation coefficient (r-value), the strength of the correlation, the p-value, the decision based on the p-value, and some remarks about the results.

The correlation coefficient (r-value) of 0.293 indicates a negligible positive correlation between the respondents' reading comprehension and problem-solving skills. The fact that the p-value is 0.000 indicates that the correlation is statistically significant at the 0.05 significance level. This shows that the null hypothesis that there is no relationship between the two variables may be rejected because the correlation is statistically significant. This finding suggests that students with greater reading comprehension may have slightly better problem-solving abilities, but this relationship is weak.

Table 7. Test of Relationship between the Reading Comprehension and Problem-solving Skills of the Respondents

Variables	r-value	Strength of Correlation	p-value	Decision	Remarks
Reading Comprehension and Problem-solving Skills	0.293*	Negligible Positive	0.000	Reject $H_0$	Significant

\*significant at  $p < 0.05$  (two-tailed)

Previous research has discovered a correlation between reading comprehension and problem-solving skills. For instance, States and colleagues (2018) discovered a positive correlation between reading comprehension and problem-solving abilities in middle school students. Table 7 displays the results of the correlation analysis between grade 10 reading comprehension and problem-solving abilities. The Pearson correlation coefficient between the two variables was 0.293, indicating a moderately positive relationship. It indicates that pupils with higher reading comprehension levels are more likely to possess superior problem-solving abilities. Baker and Wigfield (2019) and Xu and Lin (2020) found a positive correlation between reading comprehension and problem-solving abilities. According to Baker and Wigfield (2019), reading comprehension is a cognitively complex process requiring incorporating multiple skills, including decoding, vocabulary knowledge, and comprehension monitoring. These skills are also necessary for effective problem-solving, enabling students to comprehend the issue, identify pertinent information, and generate potential solutions.

Similarly, Xu and Lin (2021) discovered a positive correlation between reading comprehension and mathematical problem-solving abilities. They argued that reading comprehension requires comprehending and interpreting mathematical texts, which is necessary for solving mathematical problems. In addition, they hypothesized that the cognitive processes involved in reading comprehension, such as recognizing pertinent information and drawing inferences, are also beneficial for solving math problems.

The findings of this study provide additional evidence of the significance of reading comprehension skills for academic achievement, particularly in problem-solving. Teachers and educators can use these findings to develop reading comprehension, problem-solving strategies, and interventions for their students.

### Conclusions

The study shows a significant but faint positive correlation between grade 10 reading comprehension and problem-solving abilities. There is still capacity for growth in most students' problem-solving skills. Educators should allow students to develop and improve their problem-solving skills by incorporating problem-based learning activities and exercises into their lessons and permitting students to work collaboratively in groups or pairs. The findings of this study contribute to the knowledge of the relationship between reading



comprehension and problem-solving skills and highlight the necessity of growing these skills in students to boost both their academic and professional performance. This study was conducted to investigate the relationship between reading comprehension and problem-solving skills.

In light of the outcomes of the study, it is strongly advised that the action plan designed to strengthen reading comprehension and problem-solving skills be implemented as soon as possible.

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## Affiliations and Corresponding Information

**Marie Josephine U. Cabansag**  
D.T. Durano Memorial Integrated School  
Department of Education – Philippines