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STUDENTS' ORAL READING LEVEL AND MATHEMATICS PERFORMANCE: A CORRELATIONAL STUDY

[1]Raymund M. Belano
[1]Teacher I
[1]Sinacaban District, Division of Misamis Occidental
[1]Department of Education, Oroquieta City, Philippines

Abstract : This study was conducted to explore the relationship between students' oral reading level and their performance in Mathematics. A descriptive-correlational design was used in this study. A total of 196 Grade 8 students of Sinonoc National High School served as respondents of the study who were selected using purposive sampling technique, specifically total population sampling. Standardized Reading Assessment Tool, Reading Selection and the student's second quarter grade in Mathematics were utilized in the collection of data. This study shed light on the significant relationship between students' oral reading level and their performance in Mathematics among Grade 8 students. The findings revealed that students who possessed better reading abilities exhibited higher levels of Mathematics performance, suggesting a positive correlation between these two variables. It was also evident that age played a role in shaping students' reading abilities, while sex and parents' monthly income did not significantly impact oral reading level. Furthermore, the study highlighted the significance of addressing the connection between reading and Mathematics, as well as the influence of various factors on students' academic performance. It contributes to the existing body of knowledge by providing insights into the interplay between oral reading level and Mathematics performance among Grade 8 students.

IndexTerms - oral reading, mathematics performance, reading assessment

I. INTRODUCTION

INTRODUCTION

Education plays a crucial role in shaping students' academic success and future prospects. Within the realm of education, Mathematics is often regarded as a fundamental subject, equipping students with problem-solving skills and critical thinking abilities. However, the attainment of mathematical proficiency is influenced by various factors, one of which is students' oral reading level. The ability to read fluently and comprehend texts has been recognized as a significant advantage in mastering mathematical concepts, particularly when it comes to tackling word problems.

The relationship between oral reading level and Mathematics performance has long been a topic of interest among educators, researchers, and policymakers. Understanding the potential correlation between these two variables can provide valuable insights into the factors that contribute to students' success in Mathematics. It can also guide the development of targeted interventions to support students' learning in both reading and Mathematics domains. Consequently, the aim of this study was to investigate the extent to which students' oral reading level relates to their performance in Mathematics.

Mathematics education was one of the Department of Education's top priorities in the Philippines. Various Mathematics tests in the international, national, and even regional tests revealed a miserable state of Mathematics achievement among high school students (Imam et al., 2013). According to the 2018 Programme for International Student Assessment (PISA), Filipino students were among the poorest performing groups of students across every country that participated. More than half of the Filipino students demonstrated very low proficiency in Mathematics, whereas below one-fifths of them showed a minimum proficiency level.

Filipino students had clearly lagged behind when it came to Mathematics education, achieving beneath the lowest level of proficiency in the PISA; over fifty percent of the age group of Filipino students had inadequate Mathematical skill when compared with the rest of students worldwide (Department of Education, 2019). Moreover, several influential factors that may had affected the students' Mathematical performance were being considered like some students do not excel in Math because of reading comprehension, others also found it difficult because of lack of interest and even their attitude towards the subject (Tudy, 2014).

Looking specifically at the National Achievement Test (NAT) 2018 results, the Department of Education identified that low oral reading level and competence of the public high school students was the primary cause of their Mathematics failure. Along these lines, appropriate interventions were taken to enhance the students' Math performance. Among these initiatives were the introduction of several DepEd reading programs, the training and development of Mathematics teachers' skills, and the encouragement of English as a principal language of instruction in every public secondary school. Despite all of the government's efforts to enrich and upgrade the quality of Mathematics and reading performance of the students, the problem in these two areas still persisted (Imam et al., 2014).

The National Council of Teachers of Mathematics (NCTM) highlighted that students must learn Mathematics with comprehension and understanding. Some students were unable to fully comprehend the Mathematics themes because their ability to read hampered comprehension (Polat & Kesan, 2013). Students frequently recalled facts, formulas, techniques, and processes rather than completely comprehending them to compensate for these shortcomings (Nicolas & Emata, 2018).

On the other hand, according to Basuki (2015), learner's capacity to read begun with practical writing that typically emerges in children. This talent broaden children's reading horizons. Oral reading level, according to the definition, is the ability of children to discover information in text and to read fluently. Some indications of reading aptitude include phonemic understanding, letter knowledge, as well as comprehension of printed letters (Anjum, 2015). Meaning-making is impaired when readers encounter unknown terms or associated structures, or when they lack sufficient knowledge of the topic or selection (Grabe & Stoller, 2013). The oral reading level of secondary school students in the Philippines is generally low, according to a 2013 study conducted by the Philippine Department of Education. According to the study, only 35% of Grade 7 students were able to read at grade level, while the remaining 65% were reading below grade level. The study also discovered that reading proficiency among high school students in the Philippines has not improved significantly over the last decade (Department of Education, 2013).

When teaching reading, teachers often go through three key instructional steps: pre-, while-, and post-reading activities (Richards, 2015). Pre-reading exercises are intended to prepare students to read. Reading exercises include reading selection, reading time, and assignment completion for understanding. When children learn to read, researchers agreed that they use their knowledge of a language's sound framework, particularly phonological awareness or the capacity to recognize and manipulate individual phonemes, or sounds, in words, as emerging factors in determining the children's reading achievement (Bustos-Orosa & Ferrer, 2013).

Reading learning ability requires time, patience, and readiness, according to Susanto (2017). Children who appreciated pictures or letters from an early age are more likely to desire to read, explore new opportunities, assimilate knowledge, and have fun. Reading is necessary for youngsters to study and also broadens their knowledge (Sari et al., 2017). As a result, early childhood reading skill is crucial in order for children to quickly receive information and knowledge from a variety of sources or materials that contain words (Khadijah et al., 2022). Reading comprehension relies heavily on oral reading fluency. Students who can read fluently are more likely to succeed in school. Fluency can be improved through a variety of strategies, such as constant reading, choral reading, and collaborate reading. Every aspect of reading, including comprehension, fluency, and vocabulary, should be addressed in effective literacy instruction (Rasinski, 2014; Sarris & Dimakos, 2015).

Mathematics and Reading must work unitedly. To put it in another way, improving students' Mathematics achievement necessitates improving their reading skills (Akbasli et al., 2016; Erdem, 2016). It is additionally important to understand that young learners acquire their abilities in Mathematics and reading at various paces (Nicolas & Emata, 2018). Furthermore, a key challenge for students to solve problems was to read and comprehend the problem statement's content and questions (Boonen et al., 2016).

Studies had been conducted to investigate the relationship between the Reading and Mathematics, which is a critical skill for performing Mathematical understanding (Imam et al., 2013; Alkan & Aydin, 2021). Previous research had investigated the relationship between Mathematical problem-solving performance and ability in students of all educational levels (Derya, 2020). In addition to this, expert feedback also linked the importance of comprehension ability to problem-solving abilities. Vista (2013), for example, described in detail how language competency and oral reading level connect with word problem-solving skill. Imam et. al. (2013) reached the same conclusion when they discovered a link between oral reading level and student performance in Mathematics. Based on the results of the study, students' poor oral reading level skills are related to their Mathematical performance (Bastug, 2014; Björn et al., 2016).

The COVID-19 pandemic had influenced on education in the Philippines. Concerns had been raised about the pandemic's impact on students' reading and Math abilities in particular. The pandemic had widened existing learning gaps in the Philippines. The study discovered that students from low-income households were more likely to experience learning loss in reading and Math. The study also noted that distance learning was difficult for many students during the pandemic, particularly those without access to technology and those with learning difficulties (World Bank, 2021). Moreover, the COVID-19 pandemic had an enormous detrimental effect on grade 8 students' oral reading and Mathematics performance in the Philippines (University of the Philippines, 2021; Department of Education, 2021).

Another study conducted by the Philippine Department of Education discovered a significant decline in Reading and Math performance among students in 2020. According to the study, the decline was greater in government institutions than in private schools. The study also found that the decline was more pronounced in areas with limited internet connectivity and resources (Department of Education, 2021). According to a study conducted by the United Nations International Children's Emergency Fund (UNICEF), the pandemic had disrupted children's learning in the Philippines. School closures, according to the study, had impacted children's access to education, resulting in learning loss and widening disparities. According to the study, the government should

prioritize interventions to address these issues, such as investing in online and blended learning solutions and providing targeted assistance to disadvantaged students (UNICEF, 2021). In the Philippines, the pandemic has had a significant impact on students' reading and Math abilities, particularly among disadvantaged populations. To address these issues, students may require targeted support and interventions to catch up and continue to develop their skills (Department of Education, 2021).

Moreover, since the post-pandemic era or the new normal, some of the learners' ability to read has been affected. After a reading assessment was conducted by the language teachers of Sinonoc National High School during the school year 2022-2023, it was discovered that many of the students in the said institution had difficulty in reading, and their performance in class was greatly affected, particularly in subjects with English as the medium of instruction, such as English, Math, and Science. Thus, their capability to understand concepts were compromised, most of all, their performance in Mathematics since it involves higher-order thinking skills, analysis and comprehension. Undeniably speaking, students may have low performance in Mathematics because of their oral reading level. Moreover, this factor is still an assumption and that is the reason why the researcher wants to investigate if the oral reading level of the students will significantly affect the Mathematics performance of the students.

As a result, this research was conducted to explore the relationship between the Grade 8 students' oral reading level and their performance in Mathematics at Sinonoc National High School, Sinacaban District, Division of Misamis Occidental during the School Year 2022-2023. Thus, the result of the study served as the basis for a possible "Mathematics Reading Intervention" that can help the students to understand better and improve their performance not only in Mathematics but also other subjects with English as medium of instruction

Theoretical Framework

This study is anchored on Vygotsky's Sociocultural Theory (1978) as cited by Steele (2001), Bruner's Constructivist Theory (1966) as cited by Alamian and Moghadam (2020) and Cognitive Load Theory of Sweller (1988).

Sociocultural Theory

Lev Vygotsky's Sociocultural theory offers valuable insights into the relationship between language, culture, and the development of mathematical understanding, which is relevant to the study on students' oral reading level and Mathematics performance. According to Vygotsky, individuals internalize and transform the meanings of their culture as they engage with the language and symbols of their cultural backgrounds. In the context of Mathematics, students construct mathematical concepts and develop their understanding as they learn to express and validate their reasoning to others using the language of Mathematics.

Vygotsky proposed that language serves two purposes: internal speech for cognitive reasoning and external speech for interacting with others. Through social interaction, children begin using language to communicate before the age of two, initially lacking internal language. However, as thought and speech merge, interpersonal interaction becomes integrated and supports a child's reasoning abilities. Therefore, the social environment, including interactions with teachers and peers, plays a significant role in a child's learning process.

In the context of Mathematics education, Vygotsky's theory suggests that children can establish connections between their everyday language and the language of Mathematics when they are actively engaged mentally and physically. By expressing their existing mathematical understanding through language, teachers can gain insight into what children are experiencing and create connections between their communication and the symbolic syntax of Mathematics. This supports the growth of mathematical comprehension by linking existing knowledge with novel mathematical language to generate additional meaning.

Vygotsky's theory also emphasizes the importance of meaning-making in Mathematics education. According to this perspective, meaning cannot be directly transmitted from one mind to another through word definitions alone. Instead, children construct meaning by integrating the words and phrases they encounter with their own ideas and actions. Through this process of conceptual knowledge formation, learners generalize language and understand mathematical concepts based on their ability to decode and connect them to their prior knowledge. The regular exposure to mathematical words and concepts in everyday life also influences their understanding.

Constructivist Theory

Jerome Bruner's Constructivist Theory, also known as discovery learning, is highly relevant to the study on students' oral reading level and Mathematics performance. Bruner emphasizes the importance of active engagement and discovery in the learning process, encouraging students to seek knowledge and solutions to problems on their own. According to Bruner, this approach leads to the development of meaningful knowledge as students construct their understanding.

In the context of Mathematics education, Bruner posits that learners should be placed in settings that allow them to discover mathematical concepts and relationships, rather than simply being taught knowledge and information. He believes that Mathematics is a discipline that can be learned through existing notions and systems, and that students can search for the relationships inherent in the material using their understanding of mathematical concepts and structures. This approach aligns with the aim of the study, which explores the correlation between oral reading level and Mathematics performance, emphasizing the active engagement of students in the learning process.

Bruner's theory encompasses several key ideas for improving education. He highlights the importance of knowledge frameworks, suggesting that learners need a framework of organized knowledge to effectively acquire new information. Additionally, Bruner emphasized readiness to acquire knowledge, which refers to the idea that learners are more likely to engage with and retain information when they are developmentally ready to do so. Perception is also emphasized as a crucial aspect of the learning process,

suggesting that learners' interpretation of events shapes their understanding. Lastly, Bruner emphasized the role of drive and eagerness to learn, recognizing the significance of motivation and interest in the learning process.

Bruner, align with Vygotsky, acknowledged the impact of language on both environmental stimuli and individual reactions. Language serves as a tool for shaping and mediating one's understanding of the world. In the study's context, language and reading skills remain significant barriers for some students, as these abilities are crucial for comprehending mathematical problems and effectively communicating mathematical reasoning.

Cognitive Load Theory

Cognitive Load Theory, proposed by John Sweller, focuses on the cognitive resources individuals have available for processing information and how these resources impact learning and problem-solving.

According to CLT, when individuals engage in complex tasks, such as solving mathematical problems, their cognitive load can be divided into three types: intrinsic, extraneous, and germane. Intrinsic cognitive load refers to the inherent complexity of the task itself, extraneous cognitive load relates to the unnecessary cognitive demands imposed by the instructional design or presentation, and germane cognitive load involves the mental effort dedicated to schema acquisition and automation.

In the context of students' oral reading level and Mathematics performance, CLT suggests that strong reading skills can reduce extraneous cognitive load during problem-solving. When students struggle with reading comprehension, they may allocate a significant portion of their cognitive resources to understanding the problem's text, leaving fewer resources available for understanding the mathematical concepts and selecting appropriate problem-solving strategies.

However, students with proficient reading abilities can efficiently process the text, freeing up cognitive resources to focus on understanding and solving the underlying mathematical problem. By reducing the extraneous cognitive load associated with reading, these students can allocate more mental effort to the germane cognitive load, enabling deeper understanding and more effective application of mathematical concepts.

Therefore, the correlation between students' oral reading level and Mathematics performance can be explained by the Cognitive Load Theory. This theory suggests that students with stronger reading skills are better equipped to handle the cognitive demands of solving mathematical problems. They can more effectively process and comprehend the text within word problems, leading to enhanced mathematical understanding and performance. In general, the Cognitive Load Theory provides a strong theoretical framework that supports the study on students' oral reading level and Mathematics performance. It highlights the role of reading skills in reducing extraneous cognitive load during problem-solving, allowing students to allocate more mental effort to understanding and applying mathematical concepts. This theory offers valuable insights into the potential relationship between oral reading level and Mathematics performance, emphasizing the importance of fostering strong reading skills to enhance students' overall mathematical achievement.

Conceptual Framework

The primary objective of this research was to examine the potential connection between students' oral reading level and their performance in Mathematics. The researcher undertook this study with the intention of determining whether a significant relationship exists between these two variables. By analyzing data and conducting statistical analyses, the study aimed to shed light on the extent to which students' reading skills impact their mathematical achievement. The findings from this investigation would then be utilized to develop an effective Mathematics Reading Intervention program.

Students' Mathematical performance is influenced by various factors, and one critical aspect is their oral reading level. Proficiency in reading, encompassing fluency and comprehension, provides students with a distinct advantage when it comes to learning Mathematics, particularly in the context of solving word problems. A strong foundation in reading enables students to effectively understand and interpret the language used in math problems, enabling them to extract relevant information and apply appropriate problem-solving strategies. Thus, students with stronger reading abilities tend to demonstrate improved performance in Mathematics.

Drawing upon the findings of this study, a Mathematics Reading Intervention program was developed to address the interplay between students' reading skills and their Math performance. This intervention program aimed to enhance students' reading abilities while concurrently improving their proficiency in Mathematics. By targeting specific areas of reading that are closely related to mathematical problem-solving, such as comprehension of mathematical vocabulary and understanding complex word problems, the intervention sought to bridge the gap between reading and Math. Through targeted instruction, practice, and support, the Mathematics Reading Intervention aimed to empower students with the necessary skills to excel in both reading and Mathematics.

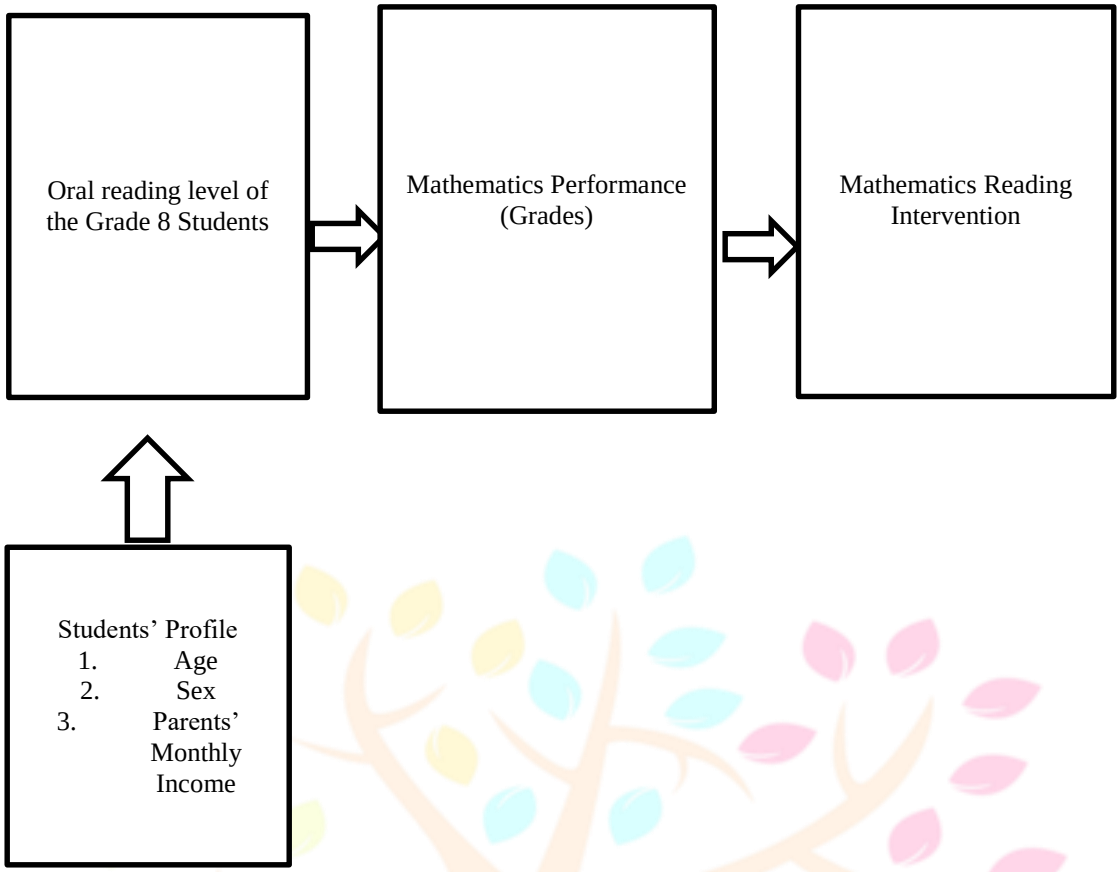

Figure 1. *Schematic Diagram of the Study*

Statement of the Problem

The study aimed to explore the relationship between students' oral reading level and their performance in Mathematics. Specifically, this study sought answers to the following questions:

1. What is the profile of students in terms of:
   1.1. age;
   1.2. sex; and
   1.3. parents' monthly income?
2. What is the oral reading level of the learner?
3. What is the Mathematics performance of the student in terms of their grade?
4. Is there a significant difference between the oral reading level of the learner when grouped by profile?
5. Is there a significant difference between Mathematics performance of the students when grouped by profile?
6. Is there a significant relationship between students' oral reading level and Mathematics performance?
7. What Mathematics reading intervention maybe proposed based on the findings of the study?

Null Hypotheses

The following hypotheses were tested in the study:

Ho_1: There is no significant difference between the oral reading level of the learner when grouped by profile.

Ho_2: There is no significant difference between Mathematics performance of the learner when grouped by profile.

Ho_3: There is no significant relationship between the oral reading level of the learner and their Mathematics performance.

Significance of the study

The study's findings benefited the following people:

Teachers. The study's findings benefited teachers, particularly those teaching Math and other English-related subjects, because students are better equipped to understand and communicate in English, making it easier for teachers to deliver lessons with confidence that the students truly understand the lesson.

School Heads/Principals. School heads/principals oversee their teachers' training and other professional development courses to assist them in facilitating learning. Knowing that teachers will provide enhancement and intervention for students, it is an opportunity to train them in various intervention strategies that can improve the teaching-learning process.

Students. Learners are able to maximize their learning potential, particularly their oral reading level, resulting in improved Math performance. Learners are directly benefited when their needs are properly addressed through various strategies used by their teachers during the intervention process, and significant academic improvement was observed.

Parents. The study's findings will help parents motivate and guide their children to value reading even at home. They are active participants in the learning process, assisting and guiding their children to reach their full potential.

Future Researchers. This serves as a foundation for future researchers to develop a well-established reading intervention, enhancement, or program with various strategies to address students' reading deficiencies in order to ensure quality performance in all subjects that use English as a medium of instruction.

Scope and Limitation of the study

The relationship between oral reading level and Mathematics performance of 196 Grade 8 students at Sinonoc National High School during the School Year 2022-2023 was the sole focus of this study. The research employed total population sampling because there were only few Grade 8 students, therefore it lacked external validity and generalizability but it served as basis for other researchers to conduct further investigation on the other variables that were not mentioned in the study. Other factors that may influence the students' oral reading level and Mathematics performance were not addressed. The materials used on this study were the reading assessment tool, reading selection and the students' grades in Mathematics for the second quarter. As a result, the factors that had not been discussed may have an impact on the overall performance of the students. The independent variable in this study is the students' oral reading level; thus, the researcher tried to determine if oral reading level has anything to do with the students' performance in Mathematics.

Definition of Terms

For greater comprehension of the study, the words used are conceptually and operationally defined below.

Reading. It refers to the procedure of determining meaning from a collection of textual symbols. When a person reads, his eyes gather visual clues which are then converted by his brain into words, phrases, and paragraphs that carry information (English Club, 2023). Reading is a cognitive process or action that involves striving to locate numerous pieces of information in text (Hadini, 2017; Meliyawati, 2016). In this study, reading is the process of which the learners can decode the text from the given printed materials.

Oral reading level. It is the ability of the reader and writer to communicate in order to obtain knowledge and information. Oral reading level is the ability of children to find information in print. DiSalle and Rasinski (2017) defined oral reading fluency as the ability to read aloud with accuracy, speed, and prosody. According to Brown (2012), oral reading level will improve the most when combined with writing, listening, and speaking activities (Edu Channel, 2022). In this study, the students' oral reading level is the independent variable and is identified if they are non-reader, frustration, instructional and independent reader.

Mathematics. It is the discipline of organization, structure, and interrelationship that evolved from primordial techniques such as calculating, measuring, and characterizing the shapes of materials. It is focused with rational thinking and mathematical calculation, and its progress has resulted in an increased level of visualization and conceptualization of the subjects it addresses (Encyclopædia Britannica, 2023). Mathematics is the subject where students' performance should be improved in this study.

Mathematics Performance. It is a student's overall Mathematical ability. Calculation, patterns, calculations, and even logical reasoning are all involved. The students' Mathematics performance is quantified in this study using their Second Grading grades in Mathematics.

II. REVIEW OF LITERATURE

This chapter presents the literature and studies that are useful in coming up with the total concept of the study.

Reading. Reading proficiency is an essential skill that influences children's and adolescents' learning experiences and school performance. Students who perform well on reading tests and are competent readers are more likely to succeed in English, Science, Math and other English-related subjects (Proudfoot, 2016).

Written materials are meant to be a form of interaction between an author and the reader. To do so, the reader needs to have established meaning with the structure, grasping ideas and information, analyzing and assessing content for reliability, and making relationships with background knowledge as well as experiences - including cultural, social, educational, and other demographics standing (Ulu, 2017).

Word knowledge is essential for assessing how effectively high school students grasp the materials they read (Hadianto et al., 2021). If learners have a sufficient vocabulary, they will be able to acquire understanding, convey ideas, interact, and learn new ideas (Alderson et al., 2015).

Reading habits and English usage in the surroundings can also have an effect on test results, as demonstrated by the findings of Bastug (2014). According to him, in three educational systems (Chinese Taipei, Hong Kong, and Singapore), the influence of the assessment language spoken within the household on student performance is According to Mulyati et al. (2017), reading, especially in the early years of education, created the way for accomplishment in other academic subjects such as Mathematics. Reading is considered a necessary component of Mathematical understanding. Moreover, a key challenge for students to solve problems is to read and comprehend the problem statement's content and questions (Boonen et al., 2016).

Reading has long been recognized as a useful tool for learning other areas of study, including Mathematics (Kikas et al., 2020). At the advent of the 20th century, the significant change in learning theories from behavioral to holistic perspectives transformed the idea of reading comprehension from an unchanging activity to an evolving procedure in which readers develop

meaning from written text (Imam et al., 2013, Anjum, 2015). This reader-text engagement defined how reading comprehension occurs, and it inspired new learning situations including Mathematics understanding (Glenberg et al., 2012; Mulyati et al., 2017).

Oral reading level. Basuki (2015) claimed that children's ability to read originated with tangible writing, which is prevalent on children. This capacity opened up a bigger reading universe for children. According to the definition, oral reading level is the ability of children to find information in printed texts or materials. The children's writing is inspired by words or sentences found around them, or it is handed to them directly by an educator. Reading is a cognitive process or action that involves striving to locate numerous pieces of information in text (Hadini, 2017; Meliyawati, 2016).

Oral reading level is defined as a student's ability to decipher a written text in order to completely comprehend it (Alderson et al., 2015). Oral reading is an important part of reading ability. Teachers can assess students' fluency, accuracy, and comprehension when they read aloud. Furthermore, oral reading can help students improve their phonemic awareness and decoding skills, both of which are necessary for reading success. In order to comprehend reading texts, two major components of reading processes must be present: smaller-scale reading processes and more advanced reading processes. Students must handle these two levels of reading processes well and spontaneously in order to fully comprehend what they are reading (Grabe & Jiang, 2013; Grabe, 2017).

Lower-level reading processes are dominated by word recognition, morphological information, and fundamental clause-level meaning units. (Grabe & Stoller, 2013). In contrast, higher-level reading processes highlight comprehension, analysis: background knowledge integration, and cognitive or self-monitoring (Koda, 2012; Viengsang & Wasanasomsithi, 2021).

Reading problems occur when a reader is unable to comprehend the implications of a text passage. The complexity of the text, the dictionary words utilized in the text, and the way the reader interacts with the topic's matter, among other factors, can all have a direct impact on reading comprehension (Harlaar et al., 2012; Özcan & Doğan, 2018). A reading skills exam should be undertaken if there is a probability of a reading comprehension impairment (Polat & Kesan, 2013; Ulu, 2017).

According to the most current Programme for International Student Assessment (PISA) report (2019), excellent reading abilities are required for academic success in all areas of the educational system, including Mathematics as well as for beneficial participation in most adult activities (Sanz et al., 2020). Oral reading level is an important part of a student's educational growth and an excellent indicator of Math skills (Cartwright et al., 2022). Oral reading level is associated with mathematics because it is a mental talent that assists pupils in understanding Mathematical principles and solving difficulties (Anselmo et al., 2017).

Mathematics Performance. Mathematics, like other subjects, is considered one of the most important core subjects in secondary school. It is an essential subject in education that fosters the development of students' cognitive abilities. Understanding and mastering Mathematics, according to Cresswell and Speelman (2020), can help students enhance analytical, logical, critical, and abstract thinking skills

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Mathematics is meant to assist students create a passion for fundamental skills in science and technology, as well as utilize what they learned in the classroom to real-world situations and meet societal needs. In order to speed up any society's social and economic status and technological development, a solid mathematical foundation is required (Azuka, 2014).

In Math, critical thinking and problem-solving skills are more important than in other classes (Akbasli et al., 2016; Salihu et al., 2018). Mathematical ability is not a purely abstract computational ability. However, it is dependent on verbal abilities at least in part (Ural & Ülper, 2013). This is supported by a large body of correlational research demonstrating that Mathematical performance is dependent on language competency (Beaudine, 2022). Mathematics has its own language that can condense a long sentence (Virgana & Lapasau, 2019).

Mathematics teaches fundamental skills such as thinking in context, making causal connections between occurrences, thinking, calculating, and problem-solving. In addition to developing calculating abilities and teaching numerals and operations in Mathematics (Onal et al., 2017). Mathematics also helps students understand and grasp other scientific and arts disciplines (Siaw et al., 2020).

According to the researchers, Mathematical performance varies because everyone's working memory capacity differed. They had found that differences in Mathematics learning were related to a lack of working memory capacity and even instructional practices (Li et al., 2022). According to some studies, the performance of the students will be harmed unless they establish a method that allows them to reconstruct the question using their working memory capacity (Batool et al., 2019).

Working memory capacity, for example, can predict mathematical performance. Memory retention (a cognitive component) impacts students' Math performance, and inadequate working memory capacity can lead to poor Math achievement (Alkan & Aydin, 2021).

Relationship between Oral reading level and Mathematics Performance. Reading is considered as an essential component of Mathematics and "Mathematical knowledge,". Being able to appreciate and enjoy the Mathematics language requires a strong reading foundation (Imam et al., 2013). Reading and Mathematics go hand in hand. To put it another way, improving students' Mathematics achievement necessitates improving their oral reading level (Akbasli et al., 2016; Erdem, 2016). It is also important to understand that young students acquire reading and Math skills at various paces (Nicolas & Emata, 2018). Furthermore, one of the most difficult challenges for students to overcome when solving problems is comprehending and reading the problem statement's subject matter and questions (Boonen et al., 2016; Salihu et al., 2018).

Numerous researches had been conducted to investigate the relationship between reading and Mathematics, most notably in terms of ability and comprehension, which are vital skills for performing Mathematical procedures (Imam et al., 2013; Bailey et al., 2020; Alkan & Aydin, 2021). According to Fuchs et al. (2013)'s research, there is a positive relationship between oral reading and math performance in elementary school students. The study discovered that students with better oral reading skills also had better math skills. Previous research looked at the association between problem-solving skill in Mathematics and reading comprehension in children of various educational levels (Boonen et al., 2016; Derya, 2020). Reading and comprehending the statement are essential steps in the problem-solving process.

Additionally, expert feedback linked the significance of comprehension ability to problem-solving abilities. For example, Trakulphadetrai et al. (2017) stipulated an in-depth explanation of how proficiency in language and reading skill affect word problem-solving performance. When Imam et al., (2013) discovered a link between reading comprehension skills and student performance in mathematics, they came to the same conclusion.

According to Polat and Kesan (2013), there is a positive correlation between Mathematics problem solving ability and overall Turkish skills: such as listening, reading, writing, and speaking ability. The relationship between oral reading level and Math scores was significantly stronger in 7th grade students than in others. Moreover, the correlation between Math scores and listening skills was more significant in 8th grade students than in others. Furthermore, on the study of Proudfoot (2016), the results showed statistically significant and positive improvements in reading comprehension skills, which could help students read and understand Mathematical problems. The findings did not provide conclusive evidence that improved reading comprehension skills that resulted in higher math word problem scores. The findings were helpful in providing insight to educational leaders who intend to use software to improve student achievement.

Students' poor reading comprehension skills were related to their performance in Mathematics (Bastug, 2014; Björn et al., 2016; Goodrich & Namkung, 2019; Gomez et al., 2020). Furthermore, a study on reading as an essential indicator of achievement in Mathematics in 10th graders revealed that students' oral reading level can explain student achievement (Anjum, 2015). Higher levels of reading comprehension ability were linked to higher levels of Mathematics achievement (Nicolas & Emata, 2018; Supontawanit & Lertlit, 2021).

Previous research found a significant relationship between Mathematics performance and reading skills (Korhonen et al., 2012), ability to read as well as performance on higher-level cognitive abilities when assessing Mathematics items (Vista, 2013; Öztürk et al., 2020), speech and test achievement on Mathematics word challenges (Alkan & Aydin, 2021), and early reading abilities and changes in Mathematics (Alkan & Aydin, 2021). Early developmental thought recognized the relationship between language abilities and Mathematics. (Glenberg et al., 2012; Gomez et al., 2020), which demonstrated that language skills were believed to cultivate ideas about numbers that have a connection to Mathematics.

As reflected in the study of Bailey et. al. (2020), given that reading and Mathematics are distinct skills, the very high correlation between them is surprising. In grades K, 1, 2, and 3, the student's reading and math accomplishment correlated at.73,.73,.74, and.72, respectively, in the nationally representative ECLS-K: 2011 data analyzed in this study. These correlations, which would have been even stronger if measurement error was considered. The results were among the strongest findings ever observed in the social and behavioral sciences for conceptually different variables. The high comorbidity rate for reading and arithmetic difficulties demonstrates the strong relationship among these factors (dyslexia and dyscalculia). Every single of these conditions had an approximate 6% incidence to adults (Goodrich & Namkung, 2019). If reading and math problems were unrelated, their comorbidity in the general population should be 0.36% (i.e., 6% x 6% = 0.36%). Instead, their comorbidity was around 4%, which was more than ten times higher (Hadianto et al., 2021).

Oral reading level is a critical component of a student's academic growth and an excellent indicator of Math skills (Cartwright et al., 2022). Oral reading level is linked to Mathematics because it is a mental capacity that aids pupils in learning Mathematical principles and solving problems (Sanz et al., 2020). Reading comprehension, which is one of the most important determinants of academic achievement (Anselmo et al., 2017), might impact a student's Mathematics abilities and learning process. Excellent readers accomplished significantly more well on standardized Math achievement assessments than normal ability readers, and normal ability readers executed significantly better than struggling readers (Akbasli et al., 2016).

III. METHODOLOGY

This chapter presents the research method being used, research environment, respondents of the study, research instruments and validity, data gathering procedure, ethical considerations and statistical treatment which were applied to gather the data and information considered in the study.

Research Method

This research employed a quantitative research design, specifically a descriptive-correlational method. The descriptive-correlational approach was chosen to examine the relationships between the variables under investigation. The primary objective of this design is to determine the presence or absence of relationships between measurable variables (Curtis et al., 2016). In this study, the focus is on investigating the significant relationship between students' oral reading level and their Mathematics performance.

By utilizing a descriptive-correlational design, the researcher aimed to provide a comprehensive description of the relationship between students' oral reading level and their performance in Mathematics. This method allows for the analysis of data

collected on these variables to determine the strength and direction of their association. It provides an opportunity to explore the extent to which oral reading level influences Mathematics performance, and vice versa.

The use of a quantitative approach enables the researcher to gather numerical data that can be analyzed using statistical methods. This allows for a more objective assessment of the relationship between oral reading level and Mathematics performance. By examining the data quantitatively, the study sought to provide empirical evidence regarding the significance of this relationship and contribute to the existing body of knowledge in the field.

Research Environment

The research was conducted at Sinonoc National High School, located in Sinonoc, Sinacaban, Misamis Occidental, within the jurisdiction of the Misamis Occidental Division. Sinonoc National High School is a prominent public institution known for its size and educational offerings. With approximately 65 teaching personnel and staff members, it boasts a dedicated team committed to providing quality education. The school is recognized as a child-friendly environment where students, teachers, and staff members feel comfortable and supported.

Within Sinonoc National High School, the Junior High School Department consists of five sections for each grade level, providing a comprehensive education to students. Additionally, the school's Senior High Department offers both academic and vocational tracks, catering to diverse student interests and career aspirations. The availability of multiple tracks allows students to pursue their chosen paths and develop their skills accordingly.

By selecting Sinonoc National High School as the research site, the study gained access to a vibrant educational community with a rich array of academic offerings. The school's commitment to creating a conducive learning environment and its provision of various educational tracks made it an ideal setting for investigating the relationship between students' oral reading level and Mathematics performance.

Respondents of the Study

The respondents of this study were a total of one hundred ninety-six (196) Grade 8 students from Sinonoc National High School. The research employed the Purposive Sampling Technique, specifically Total Population Sampling. Total population sampling is a form of purposive sampling in which the researcher includes the entire population that shares the same set of attributes. Grade 8 is divided into five sections: Honesty, Kindness, Peace, Courage, and Wisdom.

By utilizing Total Population Sampling, all Grade 8 students from Sinonoc National High School were included as participants in the study. This sampling technique ensured that every student with the specific attributes of being in Grade 8 at the school had the opportunity to be part of the research. The five sections—Honesty, Kindness, Peace, Courage, and Wisdom—the different groups within Grade 8, enabling a comprehensive analysis of the entire population.

By employing this sampling technique, the entire Grade 8 population at the school was involved. This approach allowed for a comprehensive investigation into the relationship between students' oral reading level and Mathematics performance within this specific group of students.

Table 1. Frequency of Distribution of Respondents

Section	Frequency	Percent
Honesty	35	18
Peace	39	20
Wisdom	40	20
Kindness	40	21
Courage	42	21
TOTAL	196	100

Research Instruments and Validity

The data were gathered by having the respondents complete a questionnaire that included their personal information. Pertinent details, such as their gender, age, parents' monthly income and occupation, and level of oral reading level, were collected. The students' oral reading level was determined based on a reading assessment conducted in the school, utilizing the standardized Reading Assessment Tool provided by the Division of Misamis Occidental.

To assess the students' performance in Mathematics, their individual grades for the Second Quarter of the School Year 2022-2023 were used as indicators, allowing for the examination of the correlation between their Mathematics performance and oral reading level.

Continuum of Academic Performance
(based on DepEd Order 8, series 2015)

90 & above	Outstanding
85-89	Very Satisfactory
80-84	Satisfactory
75-79	Fairly Satisfactory
below 75	Did not meet expectations

After the researcher presented the personal data tool to the defense panel, it was subsequently submitted to the adviser for further review, enrichment, and finalization. The tool underwent restructuring based on the comments provided by the adviser. Additionally, it was then submitted to three (3) education experts who had completed their post-graduate degrees for further

evaluation. The Reading Assessment Tool used in the study was a standardized instrument provided by the Division of Misamis Occidental, ensuring its validity as it had undergone standardization processes. To determine the oral reading level of the learners, the Reading Assessment Tool was utilized.

To compute for Oral Reading Score:

$$\frac{total\ number\ of\ words\ read - number\ of\ miscues}{number\ of\ words\ in\ the\ passage}\ x\ 100$$

To determine oral reading level :

Independent (97-100%)
Instructional (90-96%)
Frustration (89% and below)
Non-reader

By employing these data collection methods and utilizing standardized tools, the study aimed to gather accurate and reliable information about the students' personal details, oral reading levels, and Mathematics performance.

Procedure

The researcher sent a formal letter to the Superintendent of the Schools Division through the District Supervisor of the Sinacaban District, Division of Misamis Occidental, with the endorsement of the Dean, Adviser, and Administrative Director attached. After obtaining approval, the researcher submitted a letter to the school principals, including the rationale for the study, a request for data collection approval, and a recommendation to collect data from the respective students. The instrument was then administered to the respondents, and their responses were tabulated and gathered for subsequent statistical analysis.

The researcher asked the respondents if they were willing to participate in the research study being conducted. The purpose of the study, which was explained to them, was to collect data on the relationship between their oral reading level and Mathematics performance. It was made clear that participants would not receive any compensation for their time and that they were free to withdraw from the study at any time without any repercussions. Additionally, their decision to decline participation or withdraw from the study would not be disclosed to anyone within the institution.

Participants were informed that their personal information would not be used to identify them in any reports, ensuring their confidentiality as participants in the study. They were also informed that the research adviser and the Program Head had reviewed and approved the research study. Participants were given the opportunity to read and understand the explanation and were provided with a copy of the consent form. Subsequently, the personal data tool was administered to the respondents wherein they wrote their basic information like the name, age, sex and parents' monthly income. Moreover, the students were tasked to read a selection, after that, their oral reading level were identified if they were nonreader, frustration, instructional and independent readers. Their second grading Mathematics grades were also gathered with the help of their Mathematics teacher. The students' responses were tabulated, collated, and prepared for statistical analysis. After the analysis, various findings were identified. The researcher then generalized the findings and gave recommendations. Moreover, the researcher also provided a Mathematics Reading Intervention based on the findings of the study.

Ethical Considerations

The rights, privileges, and well-being of the participants were prioritized throughout the study. Measures were taken to avoid compulsion when inviting participants to take part in the study. The following statements below describe the ethical considerations that were used and observed during the study.

Informed Consent. The first approach involved using consent letters. These were provided to participants a few days before the event, allowing them ample time to consider their decisions. They had the opportunity to review the study's goals, benefits, and drawbacks and indicate their willingness to participate by signing the consent document. Voluntary cooperation and support were emphasized, and participants had the option to refuse to participate if they chose to do so. The use of consent letters ensured transparency and avoided any deception during the course of the study.

Confidentiality. The researcher ensured that participants' personal information and identities were kept confidential and not disclosed to the public. Data collection procedures were designed to maintain the security and anonymity of the collected data. Following data collection, the researcher handled and disposed of any papers (printed or soft copy) containing participants' data with utmost caution, ensuring their privacy and confidentiality were protected.

Treatment of Data

The following statistical tools were used to interpret the data:

Frequency and Percentage. These were employed to quantify the data on the profile of the respondents, including variables such as sex, age, section of the students, and their Mathematics performance.

Mean and Standard Deviation. These measures were utilized to determine the average and variability of the students' grades in Mathematics.

Pearson Product-Moment Correlation Coefficient (Pearson r). This statistical tool was employed to test the significant relationship between oral reading level and Mathematics performance, assessing the strength and direction of the correlation.

Mann-Whitney U Test. This test was used to examine the significant difference between the oral reading level and Mathematics performance of the students when grouped according to sex, providing insights into potential gender-related variations in the variables.

Kruskal-Wallis H Test (One-Way ANOVA). This test was utilized to assess the difference between the oral reading level and Mathematics performance of the students when grouped according to age and parents' monthly income. It allowed for the examination of potential variations across different age groups and income levels.

By employing these statistical tools, the data collected in the study were analyzed, providing insights into the relationships, differences, and patterns within the variables of interest.

IV. RESULTS AND DISCUSSION

This chapter provides the presentation, analysis, and interpretation of data.

Table 2. *Profile of Respondents in terms of Age*

Age	Frequency	Percent
12-13 years old	90	46
14-15 years old	104	53
16-17 years old	2	1
18 years old and above	-	-
TOTAL	196	100

Table 2 presents a comprehensive profile of the respondents in terms of their age. The table provides information on the frequency and percentage distribution of participants across different age categories.

The data reveals that the largest proportion of respondents, comprising 46% of the total population, fell within the age range of 12-13 years old. This indicates that a significant number of participants were in the early stages of their teenage years.

The next age category, encompassing 14-15 years old, accounted for 53% of the respondents. This indicates that a majority of the participants were in this age group, representing a substantial portion of the whole group.

Interestingly, there were only two participants (1% of the total) who belonged to the age range of 16-17 years old. This suggests that the number of respondents in this age group was relatively small compared to the other categories.

Notably, the table indicates that there were no respondents who were 18 years old and above, as denoted by the dash (-) in the corresponding cell. This implies that the study primarily focused on participants within the younger age ranges.

According to RA 10533, or the Enhanced Basic Education Act of 2013, the admission age for students to enter junior and senior high school is usually 12 and 16 years old, respectively. Thus, the expected age for Grade 8 students is 13-14 years old (Cross et al., 2016).

Table 3. *Profile of Respondents in terms of Sex*

Sex	Frequency	Percent
Male	108	55
Female	88	45
TOTAL	196	100

Table 3 presents a comprehensive profile of the respondents in terms of their sex. The table provides detailed information on the frequency and percentage distribution of participants categorized as either male or female.

According to the data, out of 196 respondents, a significant majority of 108 participants (55%) are identified as male. This indicates that a substantial proportion of the study sample consisted of male respondents. These male participants played a crucial role in contributing to the overall understanding of the research topic and its implications.

In contrast, the table reveals that 88 participants (45%) are identified as female. This highlights that a considerable number of respondents belonged to the female sex, forming a significant part of the study sample. These female participants provided valuable insights and perspectives, contributing to a well-rounded analysis of the research subject.

When examining the entire sample, including both male and female respondents, the data reflects an equal representation of both sexes. The "TOTAL" row, accounting for 100.0%, signifies that the study incorporated an even distribution of male and female participants, ensuring a balanced representation of diverse perspectives and experiences.

This comprehensive analysis of Table 3 demonstrates the importance of considering the gender composition of the respondents in the study. The inclusion of both male and female participants enriched the research findings and allows for a more comprehensive understanding of the research topic. By acknowledging and accounting for the sex distribution, the study ensured a more inclusive and representative exploration of the relationship between oral reading level and Mathematics performance among the participants.

The above number of respondents classified by sex totally agree with the DepEd Basic Education Statistics for the school year 2021-2022 that there are more male learners in Junior High School and ALS than female learners (DepEd, 2022).

Table 4. *Profile of Respondents in terms of Parents Monthly Income*

Monthly Income	Frequency	Percent
Less than Php 9,100.00	118	60
Between Php 9,100.00 – Php 18, 200.00	45	23
Between Php 18,200.00 – Php 36, 400.00	26	13

Between Php 36,400.00 – Php 63, 700.00	5	3
Between Php 63,700.00 – Php 109, 200.00	2	1
TOTAL	196	100

Table 4 provides a comprehensive profile of the respondents in terms of their parents' monthly income. The table presents detailed information on the frequency and percentage distribution of participants based on different income brackets.

The data reveal that out of the196 respondents, the largest proportion of participants, comprising 118 individuals (60%), reported a monthly income of less than Php 9,100.00. This suggests that a significant majority of the respondents came from households with relatively lower incomes.

The next income category, ranging between Php 9,100.00 and Php 18,200.00, accounted for 45 participants (23%) of the total sample. This indicates that a substantial number of respondents fell within this income bracket, reflecting a moderate level of household income.

Furthermore, the table shows that 26 respondents (13%) reported a monthly income between Php 18,200.00 and Php 36,400.00. This suggests that a smaller yet significant proportion of participants came from households with higher income levels within this range.

In addition, there were five respondents (3%) who reported a monthly income between Php 36,400.00 and Php 63,700.00, indicating a relatively smaller number of participants in this higher income bracket.

The highest income bracket, ranging from Php 63,700.00 to Php 109,200.00, included two respondents (1%) who reported such monthly income. This indicates that only a few participants belonged to households with higher levels of monthly income.

Overall, the table provides a comprehensive overview of the respondents' distribution in terms of their parents' monthly income. The data highlights the prevalence of participants from households with lower to moderate income levels, with a smaller representation of participants from higher-income households. Understanding the income distribution of the participants contributes to a comprehensive analysis of the relationship between oral reading level and Mathematics performance, taking into account the potential influence of socioeconomic factors on student outcomes.

A poor family is defined as one with a monthly income of less than Php 9,100.00, in accordance with the data from the Philippine Institute for Development Studies (PIDS). Poverty incidence has risen from 16.7 percent in 2018 to 18.1 percent in 2021, based upon the most recent national poverty estimations. This equates to 19.9 million poor people, a 2.3 million increase over the same period last year (PSA, 2021). Therefore, the result on the table above serves as the evidence of the poverty that exist in the Philippines.

Table 5. *The Oral Reading Level of the Learners*

Reading Level	Frequency	Percent
Non-reader	1	1
Frustration (89% and below)	25	13
Instructional (90% - 96%)	90	46
Independent (97-100%)	80	40
TOTAL	196	100

Table 5 presents the oral reading level of the learners participating in the study. The table provides detailed information on the frequency and percentage distribution of participants based on their reading levels.

According to the data, out of the total 196 respondents, only one participant (1%) was classified as a non-reader. This indicates that the vast majority of participants possessed some level of oral reading level, with only a minimal representation of non-readers in the sample.

The table further reveals that 25 participants (13%) fell into the frustration reading level, which encompasses scores below 89%. These learners faced challenges in reading comprehension and encountered difficulties with the assigned reading materials.

Additionally, a significant portion of the respondents, 90 participants (46%), were classified as instructional readers. This group achieved scores ranging from 90% to 96% and demonstrated a level of proficiency that allowed them to comprehend and engage with grade-level reading materials with some support and guidance.

Moreover, 80 participants (40%) exhibited independent reading abilities, achieving scores ranging from 97% to 100%. These learners demonstrated a high level of proficiency, capable of comprehending and engaging with reading materials autonomously and effectively.

Overall, Table 5 provides a comprehensive overview of the oral reading level of the learners participating in the study. The data indicates that the majority of participants possessed reading abilities, with a minimal number of non-readers in the sample. The distribution of participants across frustration, instructional, and independent reading levels further reflects the varying levels of proficiency and comprehension within the study population. Understanding the distribution of reading abilities among the participants is essential for exploring the relationship between oral reading level and Mathematics performance, and for tailoring educational interventions to address individual learning needs.

Students have increasingly recognized the crucial role of reading as it has been widely acknowledged that strong reading abilities are essential for academic achievement across various disciplines and effective participation in numerous activities (Sanz et al., 2020). Furthermore, the use of reading as a learning tool in Mathematics has been a long-standing practice (Kikas et al., 2020), as it fosters the development of vital cognitive skills such as logical reasoning, analytical thinking, critical analysis, and abstract thinking (Cresswell & Speelman, 2020).

Table 6. *Mathematics Performance of the Student in terms of Grade*

GRADE	FREQUENCY	DESCRIPTOR
5 (90-100)	99	Outstanding
4 (85-89)	41	Very Satisfactory
3 (80-84)	54	Satisfactory
2 (75-79)	2	Fairly Satisfactory
1 (70-74)	-	Did not meet expectations
TOTAL	196	-
Average Weighted Value	88.78	Very Satisfactory
Standard Deviation	5.981	-

Table 6 presents the mathematics performance of the students in terms of their grades. The table provides information on the frequency of students in each grade range and their corresponding descriptors.

The data shows that out of the total 196 respondents, the highest number of students, 99 individuals, achieved a grade of 5, which corresponds to the grade range of 90-100. These students demonstrated outstanding performance in Mathematics.

Following that, 41 students obtained a grade of 4, which falls within the range of 85-89, indicating a very satisfactory level of performance.

Furthermore, 54 students achieved a grade of 3, which corresponds to the range of 80-84, denoting a satisfactory level of performance in Mathematics.

Only two students received a grade of 2, indicating a fairly satisfactory level of performance within the range of 75-79.

It is important to note that no students attained a grade of 1, signifying that none of the participants fell below the expectation level of 70-74.

Overall, the table provides a comprehensive overview of the mathematics performance of the students in terms of their grades. The data highlights the distribution of students across different grade ranges and the corresponding descriptors. The majority of students achieved outstanding, very satisfactory, or satisfactory performance in Mathematics, as indicated by the frequency distribution. The average weighted value of 88.78 and the standard deviation of 5.981 further support the overall very satisfactory performance of the students in Mathematics.

The average weighted value is 88.78 with a standard deviation of 5.981. In general, the students have a very satisfactory performance in Mathematics for the second quarter. The international, national, and regional Mathematics tests all revealed a disappointing performance in Mathematics achievement among high school students (Imam et al., 2013) but in this case, a contrary result was reflected since the Grade 8 students Mathematics performance was very satisfactory.

Table 7. *The Significant Difference Between the Oral Reading Level of the Learner When Grouped by Profile*

Profile	U-Value	H-Value	P-Value	Interpretation	Decision on H_o
Sex	1.97764		0.058	Not Significant	Do not Reject
Age		246.6837	0.001	Significant	Reject
Parents monthly Income		11.5384	0.101	Not Significant	Do not Reject

Table 7 presents the significant difference between the oral reading level of the learners when grouped by profile. The table displays the profile, U-value, H-value, P-value, Interpretation, and Decision on H_o.

Upon analysis, it was found that the computed U-value for sex was 1.97764, resulting in a P-value that was greater than the significance level of 0.05. This indicated that there was no statistically significant difference in the oral reading level of the learners when grouped according to sex. Therefore, it can be concluded that the oral reading level of the learners was not influenced by their gender. However, it is important to note that previous studies have demonstrated that gender differences did have an impact on reading comprehension achievement (Anantasa, 2019), with females showing greater proficiency in reading compared to males (Putri & Melano, 2021)

The computed H-value 246.6837 for the learners' age produced a P-value that is less than .05 significance level. It indicates that when the learners were divided into age groups, there was a significant difference in their oral reading level. This means that the learners' reading abilities was influenced by their age. Age can have an impact on oral reading level. A correlation exists between age and oral reading level, according to Smith et al. (2019). Reading speed and comprehension tend to decline as people age. It is important to note, however, that this decline can be mitigated through continued practice and interaction with reading materials. Moreover, when choosing appropriate materials, it is critical to consider the reader's age and reading level to ensure that they are engaging and understandable (Ritchie & Bates, 2013).

The computed H-value 11.5384 for parent's monthly income produced a P-value that is greater than .05 level of significance. This means that there was no significant difference in the oral reading level of the learner when grouped according to parent's monthly income. This implies that parent's monthly income had nothing to do with the oral reading level of the learners. As implied by Republic Act No. 9155 or the Governance of Basic Education Act of 2001, which safeguards and fosters all citizens' right to excellent basic education through making such education readily available to all by providing free and compulsory elementary and high school education to all Filipino children. Through this, parents will not worry about their children's' expenses in going to school. Children from families with low incomes, on the other hand, are less prone to have experiences that encourage the development of fundamental reading abilities such as phonological understanding, vocabulary, and spoken language (Buckingham et al., 2014).

Table 8. *The Significant Difference Between Mathematics Performance of the Students When Grouped by Profile*

Profile	U-Value	H-Value	P-Value	Interpretation	Decision on H_o
Sex	17.1241		0.001	Significant	Reject
Age		239.251	0.001	Significant	Reject
Parents monthly Income		14.231	0.001	Significant	Reject

Table 8 presents the findings of the statistical analysis conducted to examine the significant difference in the mathematics performance of the students when grouped by different profiles. The table provides information on the U-value, H-value, p-value, interpretation, and the decision regarding the null hypothesis (H_o).

Upon analysis, the results reveal compelling evidence of a significant difference in the mathematics performance of the students when grouped by the profiles of sex, age, and parents' monthly income. The obtained U-values for sex, age, and parents' monthly income (17.1241, 239.251, and 14.231, respectively) were accompanied by p-values of 0.001 for each profile. These p-values, which are lower than the predetermined significance level, indicate statistical significance.

The interpretation of the results suggests that the mathematics performance of the students significantly varied according to their sex, age, and parents' monthly income. Therefore, it can be concluded that these demographic factors played a significant role in influencing the students' performance in mathematics.

Based on the statistical analysis, the null hypotheses for all three profiles are rejected. This implies that there is a substantial departure from the assumption of no difference in mathematics performance among students when considering their sex, age, and parents' monthly income.

Some studies have shown that males tend to perform better in Mathematics compared to females (Christy & Fox, 2014), possibly because females often exhibit higher levels of Math anxiety than males at both elementary and secondary levels (Hill et al., 2016).

The computed H-value of 239.251 for the learners' age resulted in a P-value that is lower than the significance level of 0.05. This indicates a significant difference in the Mathematics performance of the students when grouped based on age. Hence, it suggests that the Mathematics performance of the students is influenced by their age. Individual, educational, and social factors contribute to successful Mathematics learning and performance, and these tend to enhance as individuals grow older.

Recent research emphasized the importance of executive function skills in the development of Mathematics proficiency, including abilities such as working memory, inhibition, and shifting (Cragg & Gilmore, 2014). These cognitive skills play a crucial role in mathematical thinking and problem-solving.

Similarly, the computed H-value of 14.231 for parents' monthly income yielded a P-value lower than the significance level. This indicates a significant difference in the Mathematics performance of the students when grouped according to parents' monthly income. Consequently, it implies that the Mathematics performance of the students was influenced by their parents' financial situation.

Family variables, such as socioeconomic background, parents' educational attainment, income, and employment, along with educational resources available at home, have been found to impact pupils' Mathematics success (Lam & Zhou, 2021; Lombardi & Dearing, 2021; Marks & Pokropek, 2019). Additionally, parental support for students' learning is a significant predictor of student achievement (Bernardo et al., 2015). A study by Banerjee (2016) revealed that parental support greatly affects students' performance in Mathematics, as parents' focus on finding employment and providing for their children's needs may overshadow their ability to guide and teach them at home.

Table 9. *The Significant Relationship Between Students' Oral Reading Level and Mathematics Performance*

Variables	Computed ρ	P-Value	Interpretation
Students Oral reading level and Mathematics Performance	.5412	0.0001	High positive correlation/ Significant

Table 9 presented the results of the statistical analysis conducted to determine the significant relationship between students' oral reading level and their performance in Mathematics. The table included the computed correlation coefficient (ρ), the corresponding p-value, and the interpretation of the results.

The computed correlation coefficient between students' oral reading level and Mathematics performance was .5412, with a p-value of 0.0001. This indicated a high positive correlation between the two variables, and the relationship was found to be statistically significant.

The interpretation of the results suggested that there was a strong and positive relationship between students' oral reading level and their performance in Mathematics. This meant that as students' oral reading level improved, their Mathematics performance tended to improve as well. The correlation coefficient of .5412 indicated a moderate to strong positive association between the two variables.

The statistical significance of the relationship, as indicated by the very low p-value of 0.0001, reinforced the finding that the correlation between students' oral reading level and Mathematics performance was not due to chance. It provided strong evidence to support the notion that students with better reading abilities were likely to achieve better results in Mathematics.

In summary, Table 9 highlighted the significant relationship between students' oral reading level and their performance in Mathematics. The findings suggested that a high positive correlation existed between these variables, indicating that students' oral reading level played a crucial role in their Mathematics performance. These results emphasized the importance of promoting and enhancing students' reading skills as a means to improve their overall proficiency in Mathematics. Reading and Mathematics must

go together because learning how to appreciate and value Mathematics requires a strong reading foundation (Imam et al., 2013). Mathematics and Turkish reading skills were found to have a positive correlation as conducted by Polat and Kesan (2013). In addition, the result of the study of Proudfoot (2016), showed statistically significant and positive improvements of oral reading level of the students which could help them to read and understand Mathematical problems. Thus, a better oral reading level signifies a better Mathematics performance. A proposed Mathematics Reading Intervention that may help the students to enhance their oral reading level which will contribute to a better performance in Mathematics is reflected on this study.

V. SUMMARY, FINDINGS, CONCLUSION AND RECOMMENDATIONS

This chapter presents the summary, findings, conclusion and recommendations of the study.

Summary

This study explored the relationship between students' oral reading level and their performance in Mathematics. Specifically, it sought to answer the following questions:

1. What is the profile of students in terms of:
   1.1. age;
   1.2. sex; and
   1.3. parents' monthly income?
2. What is the oral reading level of the learner?
3. What is the Mathematics performance of the student in terms of their grade?
4. Is there a significant difference between the oral reading level of the learner when grouped by profile?
5. Is there a significant difference between Mathematics performance of the students when grouped by profile?
6. Is there a significant relationship between students' oral reading level and Mathematic performance?
7. What Mathematics reading intervention maybe proposed based on the findings of the study?

A descriptive-correlational design was used in this study. A total of 196 Grade 8 students of Sinonoc National High School served as respondents of the study who were selected using purposive sampling technique, specifically total population sampling. Standardized Reading Assessment Tool, Reading Selection and the students second quarter grade in Mathematics were utilized. The oral reading level of the students was determined based on the conducted Reading Assessment in Sinonoc National High School. For the treatment of data, frequency, percentage, mean and standard deviation were employed. Furthermore, in exploring the significant difference between the profile of the students and the oral reading level and Mathematics performance of the students, data were analyzed using Mann Whitnney U Test and Kruskal Wallis H Test. Lastly, the significant relationship between the students' oral reading level and Mathematics performance was analyzed using the Pearson Product – Moment Correlation.

Findings

The items that follow were the salient findings of this study:

1. The majority of respondents in this study fell within the age range of 14-15 years old, indicating that Grade 8 students at Sinonoc National High School were typically in this age bracket.
2. The study found that a significant proportion of the respondents were male, comprising 55.1% of the total population. This suggests a higher representation of male students compared to females in the Grade 8 cohort at Sinonoc National High School.
3. A notable finding was that a majority of the respondents' parents had an average monthly income below Php 9,100.00, indicating that a significant portion of the students come from families classified as economically disadvantaged or belonging to the lower-income bracket.
4. The study revealed that the majority of Grade 8 students at Sinonoc National High School were classified as instructional readers. This implies that most students possessed the ability to read and comprehend texts at a level that supports their learning and academic requirements.
5. Analysis of the students' Mathematics performance during the second quarter of the School Year 2022-2023 indicated that they achieved a very satisfactory level of performance. This suggests that the Grade 8 students had demonstrated competence and proficiency in Mathematics.
6. The findings suggest that age played a significant role in influencing the oral reading level of the students. However, there was no significant impact observed based on the students' sex or their parents' monthly income. This implies that the age of the students is a determining factor in their reading abilities, while other factors such as sex and income level may have a lesser or no direct influence.
7. The study revealed that the students' Mathematics performance was greatly affected and influenced by factors such as sex, age, and parents' monthly income. The significant relationships identified between these variables and Mathematics performance suggest that these factors play a role in shaping students' proficiency and achievement in Mathematics.
8. A notable finding is the highly significant relationship between the students' oral reading level and their performance in Mathematics. The positive correlation observed indicates that as students' oral reading level improves, their performance in Mathematics tends to improve as well. This highlights the critical role of reading skills in facilitating success and understanding in Mathematics.

Conclusions

In conclusion, this study shed light on the significant relationship between students' oral reading level and their performance in Mathematics among Grade 8 students at Sinonoc National High School. The findings revealed that students who possessed better reading abilities exhibited higher levels of Mathematics performance, suggesting a positive correlation between these two variables. It was also evident that age played a role in shaping students' reading abilities, while sex and parents' monthly

income did not significantly impact oral reading level. However, the Mathematics performance of the students was influenced by various factors including age, sex, and parents' monthly income. These findings emphasized the importance of nurturing and enhancing students' reading abilities as a means to improve their overall proficiency in Mathematics. The proposed Mathematics Reading Intervention, which integrated specific reading strategies into mathematics instruction, aimed to foster a deeper understanding of mathematical concepts and enhance problem-solving skills. By equipping students with the necessary tools and strategies to excel in both reading and mathematics, the intervention aimed to empower students to become confident, proficient learners in these essential domains.

The study highlights the significance of addressing the connection between reading and Mathematics, as well as the influence of various factors on students' academic performance. It contributes to the existing body of knowledge by providing insights into the interplay between oral reading level and Mathematics performance among Grade 8 students. These findings have implications for educators, highlighting the importance of incorporating reading strategies within mathematics instruction to enhance students' comprehension, critical thinking, and problem-solving skills. Future research can further explore the underlying factors that contribute to the relationship between oral reading level and Mathematics performance, with the aim of developing effective strategies and interventions to support students' academic success.

Recommendations

Based on the findings of this study, several recommendations can be made to enhance the oral reading level and Mathematics performance of Grade 8 students:

1. Implement targeted interventions: Schools should consider implementing targeted interventions that specifically focus on improving students' reading abilities within the context of Mathematics. These interventions can include strategies such as repeated reading, vocabulary development, and comprehension exercises tailored to mathematical texts and problems.
2. Provide professional development for teachers: Teachers should receive professional development opportunities that equip them with the knowledge and skills to integrate reading strategies effectively into their mathematics instruction. This can help them create a supportive learning environment that promotes both reading and Mathematics skills development.
3. Foster a culture of reading: Schools should create a culture that promotes reading across all subjects, including Mathematics. This can be achieved through initiatives such as establishing classroom libraries with math-related texts, organizing math-themed reading challenges, and incorporating literature with mathematical concepts into the curriculum.
4. Engage parents and guardians: Collaboration between schools and parents/guardians is crucial in supporting students' reading abilities and Mathematics performance. Schools can provide resources and guidance to parents on how to support their children's reading development at home, as well as organize workshops or information sessions to enhance parents' understanding of the importance of reading in Mathematics.
5. Conduct longitudinal studies: Future research should focus on conducting longitudinal studies to explore the long-term effects of oral reading level on Mathematics performance. This can help establish a deeper understanding of the relationship between these skills and identify additional factors that may influence their development over time.
6. Expand access to resources: Efforts should be made to ensure that all students have access to quality reading materials and resources, regardless of their socioeconomic background. This can include providing books, digital resources, and technology tools that support reading and Mathematics learning.

By implementing these recommendations, schools can create a supportive environment that fosters the development of students' oral reading level and enhances their Mathematics performance. Ultimately, this will contribute to their overall academic success and equip them with essential skills for future education and beyond.

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