

THE ROLE OF READING HABITS AS MODERATOR ON PROBLEM SOLVING SKILLS AND CLASSROOM ENGAGEMENT OF THE STUDENTS

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ABSTRACT

The current study aimed to evaluate whether reading habits moderate the interaction between problem solving skills and classroom engagement of the Grade 10 students. In this study, the researcher selected the 200 junior high school students in Carmen District, Davao del Norte as the respondents of the study. Stratified random sampling technique was utilized in the selection of the respondents. Non-experimental quantitative research design using descriptive- correlational method was employed. The data collected were subjected on the following statistical tools: Mean, Pearson Moment Product Correlation, multiple linear regression analysis, and hierarchical regression analysis. Findings revealed that problem solving skills, classroom engagement, and reading habits of the Grade 10 students in Carmen District, Davao del Norte were described as extensive. Further, correlation analysis demonstrated that there is significant relationship among problem solving skills, classroom engagement, and reading habits of the Grade 10 students in Carmen District, Davao del Norte. Evidently, hierarchical regression analysis proved that reading habits have moderating effect on the interaction between problem solving skills and classroom engagement of the Grade 10 students. In other words, reading habits is a significant moderator on the interaction between problem solving skills and classroom engagement of the students. The study, therefore, conducted for further utilization of findings through publication in reputable research journal.

Keywords: Educational management, problem solving skills, classroom engagement, reading habits, Davao del Norte, Philippines

1. INTRODUCTION

In today's fast-paced, knowledge-driven society, developing critical skills such as problem-solving and classroom engagement is essential for students to thrive academically and professionally. Problem-solving skills enable students to analyze and resolve complex issues, while classroom engagement ensures active participation in the learning process. However, one factor that can influence these abilities is reading habits. Developing consistent reading habits can significantly impact both problem-solving skills and classroom engagement, as reading expands knowledge, enhances cognitive abilities, and fosters curiosity. Understanding how reading habits influence the interaction between problem-solving skills and classroom engagement among students is crucial, particularly in the context of secondary education. Globally, several issues underscore the importance of addressing problem-solving skills and classroom engagement in schools. First, the digital divide has widened disparities in access to information and educational resources, significantly affecting students' reading habits and engagement levels (OECD, 2020). Second, the decline in global literacy rates poses a challenge for educators in fostering reading habits that can enhance critical thinking and problem-solving skills (UNESCO, 2021). Third, the increasing prevalence of distractions from technology—such as social media—has reduced students' attention spans and hindered classroom engagement (Anderson & Jiang, 2018).

At the national level, the Philippines faces several critical issues in education that relate to this study. First, reading comprehension scores among Filipino students have consistently ranked low in international assessments, such as the Programme for International Student Assessment (PISA), highlighting a national literacy crisis (Philippine Star, 2020). Second, there is a lack of emphasis on problem-solving and critical thinking skills in the current educational curriculum, which is more focused on rote memorization (Hernandez, 2020). Lastly, teacher training programs often do not provide sufficient support for educators to promote classroom engagement and foster problem-solving skills (Department of Education, 2020).

Locally, the educational landscape in Carmen District, Davao del Norte, faces additional challenges. First, limited access to educational resources has affected students' ability to develop strong reading habits, which in turn impacts their problem-solving skills (Santos, 2021). Second, classroom sizes are often large, making it difficult for teachers to engage all students equally, which affects overall classroom engagement (Villanueva, 2021). Lastly, parental involvement in students' academic lives is limited, particularly in rural areas, which further diminishes the importance of reading as a daily habit (Reyes, 2020).

In synthesizing these global, national, and local issues, this study aims to explore whether reading habits moderate the relationship between problem-solving skills and classroom engagement among Grade 10 students in Carmen District,

Davao del Norte. Understanding this interaction will contribute to addressing the gaps in educational practices, particularly in resource-constrained settings, and can guide the development of more effective educational policies and teaching strategies.

2. LITERATURE REVIEW

The following review of literature provides a broader understanding of the interaction between problem-solving skills, classroom engagement, and reading habits. It draws from studies conducted in ASEAN, European, African, and Australian contexts to provide a well-rounded perspective on the topic. Additionally, it identifies gaps in current research and how this study aims to address them.

Problem-Solving Skills and Classroom Engagement.

Problem-solving skills refer to students' ability to critically assess a situation, identify problems, and develop solutions. These skills are essential for success in both academic and real-world settings (Jonassen, 2019). Classroom engagement, on the other hand, refers to the active participation of students in classroom activities, which is vital for enhancing their learning experiences (Fredricks et al., 2021).

In the ASEAN region, Nguyen et al. (2020) found that problem-solving skills significantly improve classroom engagement in Vietnamese secondary schools, where students who exhibited higher problem-solving abilities were more likely to participate in class discussions and collaborative activities. Similarly, *Ramos and Cruz (2021)* in the Philippines emphasized the importance of developing problem-solving skills as part of the K-12 curriculum to enhance student engagement in classroom activities. However, these studies also noted that problem-solving skills are not adequately developed due to a lack of focus on critical thinking in the curriculum.

In Europe, Kuhl and Bellinger (2020) examined how problem-solving skills influence classroom engagement in German schools, revealing that students who are adept at solving problems are more likely to remain engaged during lessons. They also found that engagement, in turn, reinforces students' problem-solving abilities, creating a positive feedback loop. However, they noted that in overcrowded classrooms, it becomes challenging to foster problem-solving skills due to limited teacher-student interaction.

In Africa, Ochieng and Abwao (2021) explored the relationship between problem-solving and classroom engagement in Kenyan schools. They found that students with strong problem-solving skills were more actively engaged in science and mathematics classes, where they could apply their critical thinking abilities. However, these findings were tempered by the fact that many schools lack resources, such as textbooks and technology, that could further develop problem-solving skills.

In Australia, Hattie and Timperley (2020) emphasized the importance of fostering problem-solving skills in secondary education to improve student engagement. Their study revealed that when teachers provided real-world problems for students to solve, classroom engagement significantly increased. However, they also noted that for problem-solving skills to be effectively developed, students must first have strong foundational literacy and reading habits.

Reading Habits as a Moderator. Reading habits refer to the frequency and depth of students' engagement with reading materials outside the classroom. Research suggests that reading habits can significantly influence both problem-solving skills and classroom engagement by enhancing cognitive abilities and knowledge retention (Guthrie & Klauda, 2020). In this study, reading habits are considered a moderating factor in the relationship between problem-solving skills and classroom engagement.

In the ASEAN context, Lim and Tan (2021) found that students with strong reading habits demonstrated better problem-solving skills and were more engaged in classroom activities in Singaporean schools. They noted that reading habits help students process information more effectively, allowing them to apply their knowledge to solve problems. However, the study also highlighted that students who do not develop reading habits early in their academic careers struggle to catch up in terms of engagement and problem-solving.

In Europe, Ziegler and Peters (2022) demonstrated that reading habits positively moderated the relationship between problem-solving and classroom engagement in British schools. Students who read extensively outside of school were better able to engage with classroom materials and apply critical thinking to solve problems. However, the authors noted that reading habits are often influenced by socioeconomic factors, with students from wealthier backgrounds having greater access to reading materials.

In Africa, Mokoena (2021) explored how reading habits influence student engagement in South African schools. The study found that students with regular reading habits were more engaged in classroom discussions and better able to solve complex problems. However, the lack of access to books and digital resources in rural areas limited the development of these habits, particularly among low-income students.

In Australia, Goss and Sonnemann (2019) highlighted the critical role that reading habits play in enhancing both problem-solving skills and classroom engagement. Their study found that students with strong reading habits were more engaged in science and mathematics classes, where problem-solving is a key component of the curriculum. However, they also noted that students' reading habits are often influenced by their home environments, with those from literate households more likely to develop strong reading habits.

Gaps in Current Knowledge

Despite the existing body of research, several gaps remain. First, few studies have examined how reading habits moderate the relationship between problem-solving skills and classroom engagement in rural settings. Most studies focus on urban environments, where students have greater access to reading materials and educational resources. Second, there is a lack of research on how cultural factors influence reading habits and their impact on student engagement and problem-solving skills (Ochieng & Abwao, 2021). This study aims to fill these gaps by exploring the moderating role of reading habits in the context of rural schools in Carmen District, Davao del Norte.

3. METHODOLOGY

This study employed a non-experimental quantitative research design using a descriptive-correlational method to examine whether reading habits moderate the relationship between problem-solving skills and classroom engagement among Grade 10 students. The descriptive-correlational method was chosen because it allows the researcher to measure the variables without manipulation and identify relationships between them (Creswell, 2020). The study aimed to explore the existing relationship among the three variables—problem-solving skills, classroom engagement, and reading habits—and how reading habits influence the strength of this relationship.

Research Design. The study used a descriptive-correlational design to examine the relationships between problem-solving skills, classroom engagement, and reading habits. This design was appropriate as it allowed for the analysis of correlations between variables in a natural educational setting without experimental intervention (Pallant, 2020). By using this design, the study could describe the existing levels of problem-solving skills, classroom engagement, and reading habits, and determine how these variables relate to one another.

Participants and Sampling. The study involved 200 Grade 10 students from schools in Carmen District, Davao del Norte. A stratified random sampling technique was utilized to ensure a representative sample. Stratified sampling was chosen to reflect the diversity of the student population based on factors such as socioeconomic status and academic performance (Fowler, 2020). The sample size of 200 students was determined through GPower analysis to ensure sufficient statistical power for detecting significant effects in the correlational and regression analyses (Cohen, 2019).

4. DATA COLLECTION

Data were collected using a validated survey questionnaire consisting of three sections. Section A measured students' problem-solving skills, with items adapted from the Problem Solving Inventory (Heppner & Petersen, 1982). Students were asked to rate statements such as "I am confident in solving complex problems" on a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). Section B focused on classroom engagement, assessing cognitive, emotional, and behavioral engagement based on items from Fredricks et al. (2021). This section evaluated students' active participation in classroom activities, their attention during lessons, and their emotional investment in learning. Finally, Section C examined students' reading habits using a scale developed by Guthrie & Klauda (2020), which measured the frequency, duration, and types of reading activities. Sample items included statements such as "I read for pleasure outside of school" and "I read textbooks regularly."

The questionnaire was distributed both in print and electronically to accommodate students' access to digital resources. The ****pilot test**** was conducted with 30 students to assess the reliability and validity of the questionnaire, with Cronbach's alpha values for all scales exceeding 0.80, indicating high internal consistency (Pallant, 2020).

Data Analysis Procedures. Data were analyzed using SPSS (Statistical Package for the Social Sciences) and the following statistical methods:

Mean and Standard Deviation were calculated to describe the levels of problem-solving skills, classroom engagement, and reading habits among the students. Pearson Product Moment Correlation was used to determine the relationships between problem-solving skills, classroom engagement, and reading habits (Field, 2022). This test was appropriate for examining linear relationships between continuous variables. Multiple Linear Regression Analysis was performed to identify the predictors of classroom engagement, with problem-solving skills and reading habits as independent variables. This analysis provided insights into how these two variables predict classroom engagement levels. Hierarchical Regression Analysis was used to test the moderating effect of reading habits on the relationship between problem-solving skills and classroom engagement (Hair et al., 2021). The interaction term between reading habits and problem-solving skills was added to the regression model to determine if reading habits moderate the relationship.

The significance level was set at $p < 0.05$ for all statistical analyses, and the assumptions of normality, linearity, and homoscedasticity were checked to ensure the robustness of the results (Pallant, 2020).

5. DISCUSSION

The findings of this study suggest that both problem-solving skills and reading habits play significant roles in enhancing classroom engagement among Grade 10 students. The positive correlation between problem-solving skills and classroom engagement supports the assertion that students who are better equipped with critical thinking and analytical abilities are more likely to actively participate in classroom activities (Fredricks et al., 2021). This relationship is critical because classroom engagement is linked to improved academic outcomes and deeper learning (Guthrie & Klauda, 2020). The findings echo similar studies conducted in other educational contexts, such as those by Hattie and Timperley (2020), which demonstrated that problem-solving skills are integral to fostering student engagement in classrooms. A key contribution of this study is its demonstration that reading habits moderate the relationship between problem-solving skills and classroom engagement. The hierarchical regression analysis showed that the positive effects of problem-solving skills on classroom engagement were significantly enhanced among students with strong reading habits. This finding is consistent with research suggesting that frequent and deep reading strengthens cognitive abilities, such as critical thinking, information processing, and knowledge retention, which are essential for both problem-solving and classroom participation (Lim & Tan, 2021; Guthrie & Klauda, 2020). In essence, students with well-developed reading habits are better able to translate their problem-solving skills into active classroom engagement. The study's findings contribute to the Theory of Self-Determination by Deci and Ryan (2000), particularly regarding the role of autonomy in learning. Reading habits, which require self-regulation and motivation, can empower students to engage more deeply in classroom activities. This supports the notion that intrinsic motivation—such as the desire to read and learn independently—can lead to more meaningful participation in educational activities (Deci & Ryan, 2020).

The results also align with the Technology Acceptance Model (TAM), which posits that perceived usefulness and ease of use of learning strategies (in this case, reading habits) significantly influence student engagement and outcomes (Davis, 1989). Students who have developed reading habits may perceive reading as a useful tool that enhances their problem-solving abilities and engagement in class. However, several limitations need to be acknowledged. First, the study relied on self-reported data, which can be subject to response bias, as students may have over- or under-estimated their reading habits, problem-solving skills, or engagement levels (Fowler, 2020). Second, the study was conducted in a rural district, which may limit the generalizability of the findings to urban areas where students may have different access to resources. Finally, the cross-sectional nature of the study prevents the determination of causality, meaning that while relationships between variables were found, it is unclear whether reading habits directly cause changes in classroom engagement or problem-solving skills (Pallant, 2020).

6. CONCLUSION

This study reveals important insights into the relationship between problem-solving skills, reading habits, and classroom engagement among Grade 10 students in Carmen District, Davao del Norte. The findings suggest that students with strong problem-solving skills tend to be more engaged in the classroom, and this relationship is strengthened by their reading habits. Reading habits serve as a significant moderator, enhancing the impact of problem-solving skills on classroom engagement. These findings underscore the importance of fostering both problem-solving skills and reading habits in secondary education to improve student engagement and learning outcomes. The study contributes to the understanding of how cognitive skills and personal habits intersect to influence educational engagement. It highlights the need for educators and policymakers to develop strategies that promote both problem-solving and reading habits among students, particularly in resource-constrained settings.

7. RECOMMENDATIONS

Department of Education. The Department of Education should develop programs that promote reading habits among students, especially in rural areas where access to reading materials may be limited. Initiatives such as book donation programs, school libraries, and digital reading resources can help improve students' access to reading materials. Additionally, incorporating problem-solving activities into the curriculum at all grade levels can enhance students' cognitive skills and classroom engagement.

School Heads. School heads should encourage teachers to integrate reading activities into their classroom routines and provide opportunities for students to apply their problem-solving skills in practical situations. Moreover, they should create a supportive learning environment that fosters student autonomy, critical thinking, and engagement. School heads should also allocate resources for teacher training on innovative teaching strategies that combine problem-solving with reading activities.

Teachers. Teachers should promote reading habits by recommending diverse reading materials that align with students' interests and curricular goals. Furthermore, teachers should design lessons that incorporate problem-solving activities and encourage students to engage actively in class discussions, group work, and hands-on projects. Providing students with opportunities to apply their problem-solving skills in real-world contexts can boost both their engagement and their learning outcomes.

8. FUTURE RESEARCHERS

Future researchers should conduct longitudinal studies to assess how reading habits and problem-solving skills evolve over time and their long-term impact on student engagement and academic performance. Additionally, qualitative research—such as interviews and focus groups—could provide deeper insights into students' reading habits and how they perceive the relationship between these habits and their problem-solving abilities. Expanding the research to urban settings and other regions would also help determine the generalizability of the findings.

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