Non-Intellectual Factors Influencing the Mathematics Performance of Junior High School Students in the East Cluster of the Schools Division of Santiago City: Basis for Intervention Program

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ABSTRACT

This study examined the non-intellectual factors influencing the mathematics performance of Junior High School students in the East Cluster of the Schools Division of Santiago City. Utilizing a descriptive-quantitative research design, data were gathered from 356 Grade 10 students across four public schools through a validated 76-item questionnaire. Findings revealed that student-related issues, teacher practices, parental involvement, instructional materials, teaching methods, administrative and supervisory support, and school environment were perceived as slightly to moderately serious factors affecting performance. However, correlation analysis indicated no statistically significant relationship between these factors and students' actual mathematics achievement. Despite the presence of challenges, a substantial number of students attained 'Proficient' or 'Approaching Proficiency' levels. The results suggest that while non-intellectual factors exert some influence, personal motivation and broader socio-environmental variables may play a more critical role. Based on the findings, an intervention program was proposed to strengthen mathematics performance by enhancing teaching practices, increasing parental engagement, improving resource allocation, and fostering a more supportive school environment.

Keywords: Mathematics Achievement, Non-intellectual Factors, Junior High School Students, Student Motivation, Educational Interventions, Academic Performance

INTRODUCTION

Mathematics, as a foundational subject, plays a pivotal role in various facets of human life, serving as a key tool for problem-solving and prediction across diverse fields of study. Its significance extends to domestic and business transactions, scientific breakthroughs, technological advancements, and decision-making in real-life situations. The competence of individuals in Mathematics is therefore crucial for personal development and national progress.

Junior High School students' performance in Mathematics is an important predictor of their core abilities and future academic achievement. Mathematics is a foundational subject in many disciplines, and competency in this subject is required for progressing to more complicated topics in high school and beyond. Concerns are frequently raised about students' different levels of mathematical success, with factors such as teaching approaches, curriculum design, and individual learning styles all playing important roles. A stron mathematics foundation not only improves cognitive ability, but also provides students with problem-solvin skills that are useful in a variety of situations. Thus, a concerted effort to improve mathematics performanc among junior high school students is imperative for their holistic development and future academ achievements.

Mathematics education has long been recognized as a cornerstone of academic and professional success. In this regard, Ariyanti and Santoso (2020) emphasized the critical role of mathematics in equipping students with essential problem-solving abilities and logical reasoning skills competencies that are indispensable for

thriving in fields such as engineering, finance, and the sciences. Complementing this perspective, Agyeman and Nkum (2015) further argued that mathematics permeates every aspect of life, providing foundational skills that transcend traditional academic boundaries.

However, despite its acknowledged importance, mastering mathematics remains a significant challenge for many students. As noted by Ocampo, Mobo, and Cutillas (2023), variations in students' learning styles often contribute to difficulties in mathematical achievement. Consequently, enhancing mathematical learning requires a multifaceted approach. Among the critical factors to address is students' self-confidence in their mathematical abilities. In support of this, studies conducted by Azucena et al. (2022) and Kunhertanti and Santosa (2018) suggest that confidence plays a vital role in shaping students' performance in mathematics.

Nevertheless, accurately measuring this self-confidence presents its own set of challenges. As Foster (2016) pointed out, broad assessments often fail to capture the nuances of students' confidence across specific mathematical domains. This issue becomes even more pressing when contextualized within the Philippine educational landscape. Notably, the 2018 Programme for International Student Assessment (PISA) revealed that Filipino students continue to face significant difficulties in mathematics, underscoring the urgent need for targeted interventions.

The 2018 Programme for International Student Assessment (PISA) results revealed that Filipino students were among the lowest performers globally, with fewer than 20% demonstrating basic proficiency in mathematics. Alarmingly, more than half of the students scored below the minimum proficiency level, revealing significant gaps in their mathematical skills compared to their international peers (Bernardo et al., 2022). This concerning trend persisted in the subsequent PISA 2022 assessment, where the Philippines ranked 76th out of 81 participating countries in mathematics and science. Only 16% of Filipino students achieved Level 2 proficiency, the baseline level required for basic competency compared to the Organisation for Economic Co-operation and Development (OECD) average of 69%. These results underscore an urgent and ongoing need for the development and implementation of targeted strategies aimed at strengthening mathematics education across the country.

Several studies have identified a range of factors contributing to low performance in mathematics. These include student-related aspects such as interest and study habits, and teacher-related elements like personality traits, instructional methods, and use of teaching materials (Landicho, 2021).

This study aims to explore the non-intellectual factors influencing the Mathematics performance of Junior High School students in the east cluster of the Schools division of Santiago City. It seeks to identify variables such as teacher quality, curriculum design, parental involvement, and student motivation that significantly impact learning outcomes. The findings of this research will inform stakeholders, teachers, school administrators, and parents on the best practices and strategies to address specific challenges in mathematics education. Ultimately, this study aims to develop a program that will improve the academic performance of junior high school students in Mathematics contributing to the overall quality of education in the East Cluster of the Schools Division of Santiago City.

Objectives of the Study

This study generally aimed to assess the non-intellectual factors affecting the mathematics performance of Junior High School students in the East Cluster of the Schools Division of Santiago City.

Specifically, it sought to achieve the following objectives:

To determine the extent to which the following non-intellectual factors influence the Mathematics performance of Junior High School students:

1.1. Student-related factors

1.2. Teacher-related factors

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1.3. Administrator-related factors

1.4. Parent-related factors

1.5. Instructional materials

1.6. Methods and strategies

1.7. Evaluative tools

1.8. Administrative support

1.9. Supervisory support

1.10. School environment

1. To determine the Grade Point Average (GPA) in Mathematics of Grade 10 Junior High School students in the East Cluster.

2. To examine the relationship between the identified non-intellectual factors and the Mathematics academic performance of Junior High School students.

3. To develop an intervention program that may be implemented to enhance the academic performance of Junior High School students in the East Cluster of the Schools Division of Santiago City.

METHODOLOGY

This study employed a quantitative research method with a descriptive design to analyze variables using statistical procedures. It was conducted in four public junior high schools in the Division of Santiago City (Rizal National High School, Divisoria High School, Nagassican National High School, and Salvador Integrated School).

Sampling Design

The research targeted Grade 10 students for the school year 2023-2024. Using simple random sampling, a total of 356 respondents were selected from a population of 726 students across the schools, with sample sizes determined using Calmorin’s formula at a 95% confidence level.

Research Instrument

The data for this study was collected using a 76-item questionnaire adapted from Fernandez's (2022). The instrument, with a reliability score of 0.97 (Cronbach's alpha), measured factors affecting students' difficulties in mathematics, including aspects related to students, teachers, parents, instructional materials, teaching methods, evaluation tools, and support from administrators and supervisors.

Statistical Design

The study utilized several statistical tools for data analysis. The weighted mean was used to assess factors affecting students' difficulties in mathematics, including aspects such as students, teachers, parents, instructional materials, and support systems, using a 4-point scale from "Not Serious" to "Extremely Serious." To analyze respondents' grades, the study applied the Department of Education’s assessment levels, ranging from "Beginning" to "Advanced" based on their grade point averages. Additionally, Pearson's correlation coefficient was employed to examine the relationship between these factors and students' academic performance in mathematics.

RESULTS AND DISCUSSIONS

Extent of Non-intellectual factors affecting the mathematics performance of Junior High School students.

Table 1. Extent of Non-intellectual factors affecting the Mathematics performance of Junior High School students in terms of Student Factor

Table 1. *Extent of Non-intellectual factors affecting the Mathematics performance of Junior High School students in terms of Student Factor*

Statement Indicators	M	SD	INTERPRETATION
1. Frequent absence in mathematics class	2.21	0.96	Slightly Serious
2. Behavioral discomfort that distress an individual experience	2.42	0.89	Slightly Serious
3. Failure to adhere classroom rules and regulations	2.24	0.88	Slightly Serioust
4. Failure to do daily assignments.	2.61	0.89	Moderately Serious
5. Failure to submit projects on specified date	2.72	0.90	Moderately Serious
6. Experience a problematic health problems	2.62	0.86	ModeratelySerious
7. Negative Attitude towards learning	2.50	0.89	Slightly Serious
8. Poor foundation of the four fundamental operations in Mathematics.	2.45	0.83	Slightly Serious
9. Poor reading comprehension skills.	2.56	0.87	ModeratelySerious
10. Habit of being late in class.	2.28	0.92	Slightly Serious
Category Mean	2.46	0.17	Slightly Serious

As revealed in Table 1, the highest mean score is associated with the "Failure to submit projects on the specified date" (M=2.72), indicating that this factor is perceived as moderately serious by the students and interpreted as moderate extent. This is closely followed by "Experience a problematic health problem" (M=2.62) and "Failure to do daily assignments" (M=2.61), both are also considered moderately serious. Another moderately serious factor is "Poor reading comprehension skills" (M=2.56).

Other factors perceived as slightly serious and slight extent include "Negative attitude towards learning" (M=2.50), "Poor foundation of the four fundamental operations in Mathematics" (M=2.45), and "Behavioral discomfort that distress an individual experience" (M=2.42). "Habit of being late in class" (M=2.28), "Failure to adhere to classroom rules and regulations" (M=2.24), and "Frequent absence in mathematics class" (M=2.21) also fall under the slightly serious category.

Overall, the category mean of 2.46 suggests that, on average, the student-related factors contribute to a slightly serious and slight extent level of seriousness in mathematics performance among JHS students. This implies that some factors are more challenging than others, collectively, they pose a moderate challenge, with the need for targeted interventions to address specific difficulties like project submission, health problems, and daily assignments to improve overall mathematics performance.

The data suggests that while student factors are generally perceived as slightly serious, addressing challenges related to homework completion, meeting project deadlines, health issues, and comprehension of mathematical concepts and texts could positively impact mathematics performance among junior high school students in this cluster. The findings is in consonance to the study conducted by Lee and Kim (2020) who examines the impact of student-centered learning on mathematics achievement and attitudes of students. The results suggest that student-centered learning can improve mathematics performance and promote positive attitudes towards mathematics.

Table 2 Extent of Non-intellectual factors affecting the mathematics performance of Junior High School students in terms of Teacher Factor

Table 2. Extent of Non-intellectual factors affecting the Mathematics performance of Junior High School students in terms of Teacher Factor

Statement Indicators	M	SD	INTERPRETATION
1. Failure to teach the subject daily	2.51	0.93	Slightly Serious
2. Unfair preferential treatment to a student or favoritism	2.47	0.94	Slightly Serioust
3. Frequent absences and tardiness	2.27	0.90	Slightly Serious
4. Inability to formulate higher order thinking skills questions	2.45	0.92	Slightly Serious
5. Lack of knowledge in manipulating new technologies	2.32	0.89	Slightly Serious
6. Negative attitude in attending higher level of trainings due to financial constraints.	2.40	0.91	Slightly Serious
7. Not sensitive to the needs of the learners	2.45	0.92	Slightly Serious
8. Uses only one method/strategy in teaching the whole year round.	2.31	0.93	Slightly Serious
Category Mean	2.40	0.09	Slightly Serious

Table 2 illustrates perception into the extent to which various teacher-related factors influence the difficulties in the mathematics performance of junior high school students. The factor causing the most serious is "Failure to teach the subject daily" (M = 2.5). This is followed by "Unfair preferential treatment to a student or favoritism" (M = 2.47). Both "Inability to formulate higher-order thinking skills questions" (M = 2.45) and "Not sensitive to the needs of the learners" (M = 2.45) share the same rating. Additional factors such as "Negative attitude in attending higher level of trainings due to financial constraints" (M = 2.40), "Lack of knowledge in manipulating new technologies" (M = 2.32), "Uses only one method/strategy in teaching the whole year round" (M = 2.31), and "Frequent absences and tardiness" (M = 2.27) also fall under the "Slightly serious" category which was interpretated slight extent of seriousness.

The overall category mean of (M = 2.40) indicates that the teacher-related factors are, on average, slightly serious and slight extent for students . This suggests that while these issues do affect mathematics performance, they are not overwhelmingly problematic but do require attention to improve the educational experience.

The data suggests that while teacher factors are generally perceived as slightly difficult, addressing challenges related to consistency in lesson delivery, bias awareness, promotion of critical thinking, attendance, and technology integration could positively impact mathematics performance among junior high school students in this cluster. Similarly, Okoro, E. O., & Okeke, C. C. (2018) proves that teacher-related factors, such as teaching experience, educational level, and classroom environment, significantly influenced mathematics achievement among junior high school students. The study recommended that teachers should be trained to develop effective teaching strategies and classroom management skills.

Table 3 Extent of Non-intellectual factors affecting the Mathematics performance of Junior High School students in terms of Administrator Factor

Table 3. Extent of Non-intellectual factors affecting the Mathematics performance of Junior High School students in terms of Administrator Factor

Statement Indicators	M	SD	INTERPRETATION
1. Failure to give recognition to teachers with exemplary performance.	2.46	0.91	Slightly Serious
2. Failure to make sound decision – making due to political Interventions	2.35	0.81	Slightly Serious
3. Failure to observe classes regularly.	2.37	0.94	Slightly Serious
4. Inability to conduct School-based In-Service Training.	2.35	0.86	Slightly Serioust
5. Inability to evaluate Mathematics instruction	2.45	0.93	Slightly Serious
6. Inability to implement proposed projects due to financial Constraints	2.40	0.85	Slightly Serious
7. Lack of human relations skills	2.29	0.97	Slightly Serious
8. Playing favoritism among teachers	2.54	1.07	Moderately Serious
9. Projects an image of superiority	2.36	0.89	Slightly Serious
10. Spends more time on administrative tasks rather than supervisory activity	2.34	0.96	Slightly Serious
Category Mean	2.39	0.07	Slightly Serious

Table 3 shows the extent of non-intellectual factors affecting the Mathematics performance of Junior High School students in terms of administrator factor. The highest mean was for "Playing favoritism among teachers" (M = 2.54) indicating it is moderately serious which was perceived as moderately extent. Other factors were seen as slightly serious and slight extent, including "Failure to give recognition to teachers with exemplary performance" (M = 2.46), "Inability to evaluate Mathematics instruction" (M = 2.45), "Inability to implement proposed projects due to financial constraints" (M = 2.40), and "Failure to observe classes regularly" (M = 2.37).

Additional slightly difficult factors included "Projects an image of superiority" (M = 2.36), "Failure to make sound decision-making due to political interventions" (M = 2.35), "Inability to conduct School-based In-Service Training" (M = 2.35), "Spends more time on administrative tasks rather than supervisory activity" (M = 2.34), and "Lack of human relations skills" (M = 2.29).

The overall category mean for administrator factors was 2.39, indicating these factors were generally perceived as slightly serious and slight extent. This suggests consistent challenges related to administrative actions and behaviors that slightly hinder the mathematics performance of JHS students. Addressing these issues could improve academic outcomes by reducing administrative difficulties faced by teachers and students.

The result is in parallel to the research study conducted by Ladson-Billings, G., & Tate, W. F. (2019) who examined the impact of teacher biases on mathematics performance among students from diverse backgrounds. The review found that teacher biases can significantly affect students' motivation and self-efficacy, leading to poorer mathematics performance.

Table 4 Extent of non-intellectual factors affecting the mathematics performance of Junior High School students in terms of Parent Factor

Table 4. Extent of Non-intellectual factors affecting the Mathematics performance of Junior High School students in terms of Parent Factor

Statement Indicators	M	SD	INTERPRETATION
1. Failure to assist their children in school work	2.47	1.03	Slightly Serious
2. Inability to pay school obligations due to poverty	2.41	0.98	Slightly Serious
3. Inability to provide the needed school materials for their children due to financial constraints.	2.54	0.98	Moderately Serious
4. Indifferent attitude in allowing their children to join contests of various levels	2.41	0.93	Slightly Serious
5. Lukewarm attitude of parents to support the program/activities of the School	2.28	0.94	Slightly Serious
6. Misconception on the policies of the School.	2.31	0.89	Slightly Serious
7. Negative attitude in attending school assemblies/meetings	2.28	1.02	Slightly Serious
8. Unpleasant relationship between parents, teachers, and Administrator	2.33	1.01	Slightly Serious
9. Unpleasant relationships among members of the family	2.24	1.01	Slightly Serious
Category Mean	2.36	0.10	Slightly Serious

Table 4 illustrates the extent to which various parent-related factors affect the non-intellectual factors in mathematics performance of junior high school students in the east cluster of schools' division of Santiago City. The most challenging aspect is the inability of parents to provide necessary school materials due to financial constraints (M = 2.54), which is considered moderately serious and perceived as moderate extent Following this, failing to assist children in school work (M = 2.47) and displaying an indifferent attitude towards allowing children to participate in contests (M = 2.41) are perceived as slightly serious. Similarly, the inability to meet school obligations due to poverty (M = 2.41) and misconceptions about school policies (M = 2.31) are also rated as slightly serious and perceived as slight extent.

Moreover, the lukewarm attitude of parents towards supporting school programs/activities (M =2.28), negative attendance at school assemblies/meetings (M =2.28), unpleasant relationships between parents, teachers, and

administrators (M = 2.33), and unpleasant relationships among family members (M = 2.24) are perceived as slightly serious, albeit to varying degrees.

Overall, the category mean for parental factors is 2.36 suggesting that the challenges faced by junior high school students in mathematics performance due to parental factors are generally perceived as slightly serious and slight extent. This implies that while these challenges exist, they are not insurmountable and could potentially be addressed through targeted interventions and support mechanisms.

Moreover, the findings on parent factor imply that while financial constraints and lack of engagement are notable issues, they generally exert a moderate influence on students' difficulties in mathematics performance. This proves by Huang, Y., & Wang, X. (2015) who found that parental involvement, including factors such as attending school events and communicating with teachers, has a positive impact on students' mathematics achievement.

Table 5 Extent of non-intellectual factors affecting the mathematics performance of Junior High School students in terms of Instructional Materials Factor

Table 5. Extent of Non-intellectual factors affecting the Mathematics performance of Junior High School students in terms of Instructional Materials Factor

Statement Indicators	M	SD	INTERPRETATION
1. Dearth of reference books and other supplementary reading Materials	2.37	0.98	Slightly Serious
2. Financial constraints to purchase the needed materials	2.47	0.82	Slightly Serious
3. Inadequate modern materials	2.42	0.86	Slightly Serious
4. Insufficient copies of charts, pictures, and illustrations	2.35	0.85	Slightly Serious
5. Low quality of books/materials issued to Mathematics	2.37	0.94	Slightly Serious
Category Mean	2.40	0.05	Slightly Serious

Table 5 details the extent to which non-intellectual factors related to instructional materials. The highest mean was observed for "Financial constraints to purchase the needed materials" (M = 2.47), indicating a slightly serious situation and perceived as slight extent. This was followed closely by "Inadequate modern materials" (M = 2.42) and "Low quality of books/materials issued to Mathematics" (M = 2.37), both also perceived as slightly serious. Similarly, the dearth of reference books and supplementary reading materials (M = 2.37) and insufficient copies of charts, pictures, and illustrations (M = 2.35) were considered slightly serious challenges.

Overall, the category mean for instructional materials factors was 2.40, indicating that the seriousness faced by junior high school students in mathematics performance due to instructional materials are generally perceived as slightly serious and slight extent. This suggests a need for addressing issues such as financial constraints, inadequacy of modern materials, and the quality of issued materials to improve the learning environment and subsequently enhance student performance in mathematics.

The data suggests that the lack and inadequacy of instructional materials present a slight difficulty, addressing financial constraints and improving the availability and quality of educational resources could positively impact mathematics performance among junior high school students in this cluster. Goyal, S., & Kumar, A. (2020) in their systematic review found that instructional materials were a critical factor in improving mathematics performance among students, and that the lack of these materials was a significant barrier to learning.

Table 6 Extent of non-intellectual factors affecting the Mathematics performance of Junior High School students in terms of Methods and Strategies Factor

Table 6. Extent of Non-intellectual factors affecting the Mathematics performance of Junior High School students in terms of Methods and Strategies Factor

Statement Indicators	M	SD	INTERPRETATION
1. Teachers employ methods/strategies that are not suitable to the nature of the subject matter and learners.	2.38	0.97	Slightly Serious
2. Teachers inability to deal with students with poor Mathematics background	2.45	0.91	Slightly Serious
3. Teachers introduce too many innovations in the field	2.40	0.85	Slightly Serious
4. Teachers prefer to use traditional methods in teaching	2.24	0.90	Slightly Serious
5. Teachers used the same methods throughout the year Approaches	2.24	0.92	Slightly Serious
Category Mean	2.34	0.10	Slightly Serious

Table 6 outlines the extent to which various methods and strategies employed by teachers that affect the the mathematics performance of junior high school students in the east cluster of schools' division of Santiago City.

The highest challenge, with a mean of 2.45 is teachers struggling to help students with weak math backgrounds. Similarly, using methods not suitable for the subject and learners (M = 2.38) and introducing too many new methods (M = 2.40) are seen as slightly serious. Teachers' preference for traditional methods (M = 2.24) and sticking to the same methods all year (M = 2.24) are also slight challenges and slight extent.

Overall, the average serious rating for method and strategy factors is 2.34 and perceived as slight extent. This suggests that while there are challenges, they're manageable with targeted support.

The data on methods and strategies factor suggests that the teaching methods and strategies employed present slight difficulties, addressing the specific issues of adapting teaching strategies to student needs and balancing innovation with effective traditional methods could positively impact the mathematics performance of junior high school students in this cluster. The study conducted by Lee, Kim, and Lee (2015) found that teachers' beliefs and practices had a significant impact on student mathematics achievement, and that teachers who believed in the importance of mathematics and used inquiry-based instruction had higher-achieving students.

Table 7 Extent of non-intellectual factors affecting the Mathematics performance of Junior High School students in terms of Evaluative Factor

Table 7. Extent of Non-intellectual factors affecting the Mathematics performance of Junior High School students in terms of Evaluative Factor

Statement Indicators	M	SD	INTERPRETATION
1. Difficulty of teachers to do item analysis every grading period	2.39	0.99	Slightly Serious
2. Difficulty of teachers in formulating higher-order thinking skills (HOTS) questions	2.43	0.88	Slightly Serious
3. Failure of teachers to evaluate student's performance daily	2.34	0.84	Slightly Serious
4. Financial constraints in the production of test materials for every grading period	2.39	0.90	Slightly Serious
5. Teacher–made tests are more discrete than the integrative Type	2.37	0.92	Slightly Serious
Category Mean	2.39	0.03	Slightly Serious

Table 7 presents the extent to which evaluative factors affect the mathematics performance of junior high school students in the east cluster of schools' division of Santiago City.

The highest mean was found for the "Difficulty of teachers in formulating higher-order thinking skills (HOTS) questions" (M = 2.43), which is considered slightly serious and perceived as slight extent. Following closely, the "Difficulty of teachers to do item analysis every grading period" (M = 2.39) and the "Financial constraints in the production of test materials for every grading period" (M = 2.39) were also perceived as slightly serious challenges. Similarly, the failure of teachers to evaluate students' performance daily (M = 2.34) and the observation that teacher-made tests are more discrete than the integrative type (M = 2.37) were rated as slightly serious, albeit with slightly lower mean scores.

Overall, the category mean for evaluative factors was 2.39, suggesting that the challenges faced by junior high school students in mathematics performance due to evaluative factors are generally perceived as slightly serious and slight extent. This indicates the need for improvements in evaluative practices to alleviate these challenges and enhance students' mathematical performance.

Table 8 Extent of non-intellectual factors affecting the Mathematics performance of Junior High School students in terms of Administrative Support Factor

Table 8. Extent of Non-intellectual factors affecting the Mathematics performance of Junior High School students in terms of Administrative Support Factor

Statement Indicators	M	SD	INTERPRETATION
1. Administrators spend more time in administrative work than in supervision.	2.51	0.96	Slightly Serious
2. Always out of the School	2.42	1.01	Slightly Serious
3. It does not involve teachers in planning because the "leader knows best."	2.40	0.96	Slightly Serious
4. Failure to reward teachers for their exemplary performance	2.38	0.90	Slightly Serious
5. Inability to encourage teachers to pursue higher education	2.32	0.91	Slightly Serious
6. Inability to support teachers in the procurement of instructional materials	2.35	0.95	Slightly Serious
7. No encouragement from the administrators in the implementation of the programs	2.31	0.94	Slightly Serious
8. Seldom provides staff with opportunities for external and internal professional development	2.26	0.95	Slightly Serious
Category Mean	2.37	0.07	Slightly Serious

Table 8 provides insight into the extent to which administrative support factors influence the mathematics performance of junior high school students in the east cluster of schools' division of Santiago City.

The highest mean in the table belongs to the statement indicating that administrators spend more time on administrative tasks than on supervision (M = 2.51), which is interpreted as slightly serious and perceived as slight extent. Following this, the factors of administrators frequently being absent from the school (M = 2.42) and not involving teachers in planning due to a "leader knows best" mentality (M = 2.40) are also perceived as slightly serious. Similarly, the failure to recognize and reward teachers for their exemplary performance (M = 2.38), the inability to motivate teachers to pursue higher education (M = 2.32), and the lack of support for teachers in acquiring instructional materials (M = 2.35) are rated as slightly serious challenges. Furthermore, the absence of encouragement from administrators in implementing programs (M = 2.31) and the infrequent provision of opportunities for staff professional development (M = 2.26) are also considered slightly serious.

Overall, the category mean for administrative support factors is 2.37, suggesting that the challenges faced by junior high school students in mathematics performance due to administrative support factors are generally perceived as slightly serious and slight extent. This implies that while these challenges exist, they may not be insurmountable and could potentially be addressed through targeted interventions and support mechanisms.

The data implies that while administrative support is perceived as slightly difficult, addressing issues such as prioritizing supervision over administrative tasks, promoting teacher involvement in decision-making, and providing adequate support for professional development could positively impact mathematics performance among junior high school students in this cluster. Lee, V. E., & Bryk, A. S. (2016) also highlighted that school

leadership, teacher collaboration, and administrative support were all important factors in predicting student outcomes, including mathematics performance.

Table 9 Extent of non-intellectual factors affecting the mathematics performance of Junior High School students in terms of Supervisory Support Factor

Table 9. Extent of Non-intellectual factors affecting the Mathematics performance of Junior High School students in terms of Supervisory Support Factor

Statement Indicators	M	SD	INTERPRETATION
1. Failure to conduct demonstration teachings on new trends in teaching	2.40	0.98	Slightly Serious
2. Failure to conduct in-service training	2.37	0.84	Slightly Serious
3. Failure to motivate the staff to try new innovations	2.38	0.91	Slightly Serious
4. Failure to work toward the improvement of the instructional program within the School through faculty study groups and other evaluation process	2.41	0.93	Slightly Serious
5. Inability to observe classes	2.37	0.95	Slightly Serious
6. Lack of understanding of the people and strategies of change that are required to get the organization	2.41	0.90	Slightly Serious
7. The mathematics program is not well-monitored	2.30	0.94	Slightly Serious
Category Mean	2.38	0.04	Slightly Serious

Table 9 presents the extent to which supervisory support factors influence the mathematics performance of junior high school students in the east cluster of schools' division of Santiago City.

As revealed in Table 9, "Failure to work toward the improvement of the instructional program within the School through faculty study groups and other evaluation processes" (M = 2.41). This suggests a situation that is slightly serious. Following closely are "Lack of understanding of the people and strategies of change that are required to get the organization" (M = 2.41) and "Failure to conduct demonstration teachings on new trends in teaching" (M = 2.40), both also perceived as slightly serious and slight extent. Similarly, "Failure to motivate the staff to try new innovations" (M = 2.38), "Failure to conduct in-service training" (M = 2.37), and "Inability to observe classes" (M = 2.37) are rated as slightly serious challenges. "The mathematics program is not well-monitored" (M = 2.30) is also considered slightly serious, although it has a slightly lower mean compared to the other statements.

Overall, the category mean for supervisory support factors is 2.38, indicating that the challenges faced by junior high school students in mathematics performance due to supervisory support factors are generally perceived as slightly serious and slight extent. This implies that while improvements are needed, the challenges are not insurmountable and could potentially be addressed through focused efforts to enhance supervisory support within the educational system.

The data on supervisory support factor suggests that while supervisory support is perceived as slightly serious, addressing issues such as facilitating demonstration teachings, providing adequate in-service training, fostering a culture of innovation, and improving program evaluation and monitoring could positively impact mathematics performance among junior high school students in this cluster. Akiba *et.al.*, (2015) found that teacher support, including supervisory support, was positively related to student achievement in mathematics. In fact, they used data from the Programme for International Student Assessment (PISA) to analyze the relationship between teacher support and student mathematics performance.

Table 10 Extent of Fnon-intellectual factors affecting the mathematics performance of Junior High School students in terms of School Factor

Table 10. Extent of Non-intellectual factors affecting the Mathematics performance of Junior High School students in terms of School Factor

Statement Indicators	M	SD	INTERPRETATION
1. Absence of library facilities	2.44	1.01	Slightly Serious
2. Absence of modern equipment	2.45	0.91	Slightly Serious
3. Books issued to the field are easily torn.	2.44	0.91	Slightly Serious
4. Failure to purchase the needed modern materials for daily teaching due to financial constraints	2.47	0.95	Slightly Serious
5. Inadequacy of reference books	2.42	0.95	Slightly Serious
6. Overlapping of school activities	2.56	0.98	Slightly Serious
7. Oversize enrollment in the classroom	2.40	0.95	Slightly Serious
8. Poor classroom facilities	2.49	1.01	Slightly Serious
9. Unpleasant relationships among teachers and administrators.	2.37	1.01	Slightly Serious
Category Mean	2.45	0.06	Slightly Serious

Table 10 presents the extent to which various school-related factors influence the mathematics performance of junior high school students in the east cluster of schools' division of Santiago City.

As revealed in Table 10, the highest mean was observed in the statement indicating "Overlapping of school activities" (M = 2.56). Following closely behind are factors such as "Poor classroom facilities" (M = 2.49), and "Failure to purchase the needed modern materials for daily teaching due to financial constraints" (M = 2.47), both of which are also rated as slightly serious challenges and slight extent.

Additionally, issues such as the "Absence of modern equipment" (M = 2.45), "Absence of library facilities" (M = 2.44), and "Books issued to the field are easily torn" (M = 2.44) are perceived as slightly serious. Similarly, concerns like the "Inadequacy of reference books" (M = 2.42), "Oversize enrollment in the classroom" (M = 2.40), and "Unpleasant relationships among teachers and administrators" (M = 2.37) are all rated as slightly serious, though with slightly lower means.

Overall, the collective mean for school factors is 2.45, indicating that the challenges faced by Junior High School students in mathematics performance due to school-related factors are generally perceived as slightly serious and slight extent. This implies that while these challenges exist, they are manageable and could potentially be addressed through strategic interventions and improvements within the school environment.

The data suggests that while school factors are perceived as slightly difficult, addressing issues such as coordinating school activities, improving resource availability, and enhancing the learning environment could positively impact mathematics performance among junior high school students in this cluster. Indeed, Hashemi, S., & Jafari, M. (2017) found that school factors such as school size, teacher qualification, and availability of resources were significant predictors of students' mathematics achievement.

The grade point average of the Grade 10 Junior High School students in Mathematics

Table 11 Distribution of the Junior High School Students According to their Mathematics Academic Performance

Mean Performance Scores	Frequency	Percent	Remarks
90 and above	66	18.54	Advanced
85 - 89	148	41.57	Proficient
80 - 84	92	25.84	Approaching Proficiency
75 - 79	49	13.76	Developing
74 and below	1	0.28	Beginning

As revealed in Table 11, the distribution of 356 Junior High School students based on their mathematics performance scores. The majority of students exhibit a high level of proficiency. Specifically, 66 students, accounting for 18.54% of the sample, achieved scores of 90 and above, classifying them as 'Advanced'. The largest group, with 148 students or 41.57%, scored between 85 and 89, placing them in the 'Proficient' category. Meanwhile, 92 students, representing 25.84%, fell within the 'Approaching Proficiency' range with scores from 80 to 84. Another 49 students, making up 13.76%, were in the 'Developing' category with scores between 75 and 79. Lastly, only 1 student, constituting 0.28% of the sample, scored 74 or below, which is categorized as 'Beginning'. This distribution suggests that a significant portion of the students are performing at or above the proficiency level in mathematics.

Relationship between the Non-intellectual factors affecting the Mathematics performance of Junior High School students and their Academic Performance

Table 12 Relationship between the on-intellectual factors affecting the Mathematics performance of Junior High School students and their Academic Performance in terms of student, teacher, administrator, parent, instructional materials, methods and strategies, evaluative tools, administrative support, supervisory support and school factors

Factors		Academic Performance	Decision	Interpretation
Student	R	0.048^{ns}	Accept the Null Hypothesis	Not significant
	p-value	0.371		
Teacher	R	0.116^{ns}	Accept the Null Hypothesis	Not significant
	p-value	0.128		
Administrator	R	0.039^{ns}	Accept the Null Hypothesis	Not significant
	p-value	0.466		
Parent	R	0.068^{ns}	Accept the Null Hypothesis	Not significant
	p-value	0.201		
Instructional Materials	R	-0.013^{ns}	Accept the Null Hypothesis	Not significant
	p-value	0.811		
Methods and Strategies	R	0.036^{ns}	Accept the Null Hypothesis	Not significant
	p-value	0.499		
Evaluative Tools	R	-0.010^{ns}	Accept the Null Hypothesis	Not significant
	p-value	0.848		
Administrative Support	R	0.059^{ns}	Accept the Null Hypothesis	Not significant
	p-value	0.264		
Supervisory Support	R	0.037^{ns}	Accept the Null Hypothesis	Not significant
	p-value	0.486		
School	R	0.042^{ns}	Accept the Null Hypothesis	Not significant
	p-value	0.428		

ns = not significant

The results in Table 12 demonstrate that none of the examined factors such as student characteristics, teacher influence, administrative support, parental involvement, instructional materials, and others show a significant relationship with the academic performance of Grade 10 students in mathematics. The Pearson correlation coefficients (r) are all close to zero, indicating a very weak degree of relationship between these factors and students' mathematics performance. Additionally, all p-values are greater than the commonly accepted significance level of 0.05, which leads to the acceptance of the null hypothesis (Ho) for each factor. This means that the variables tested do not have a statistically significant impact on students' mathematics performance.

Several reasons could explain this lack of significance. First, academic performance is a multifaceted construct influenced by a wide range of variables, many of which may not have been included in this study. Factors such as personal motivation, learning styles, socio-economic status, and classroom environment might play a more

substantial role in mathematics achievement. Additionally, the measures used for assessing these factors could have limitations in capturing their true impact on student performance.

The findings can also be supported by theories like Bronfenbrenner's Ecological Systems Theory, which emphasizes the complex and interacting layers of influences on a student's development. The absence of significant relationships in this study might reflect the need to consider a broader range of environmental and contextual factors, beyond those examined here, that interact dynamically to influence academic performance. The theory suggests that looking at isolated factors may not be sufficient, as student performance is shaped by multiple, interconnected systems.

The acceptance of the null hypothesis, confirming that the variables tested when considered individually, do not significantly affect the mathematics performance of Grade 10 students. This suggests the need for a more comprehensive approach in future studies, potentially including a wider array of variables or examining how these factors interact with one another.

The result of the study aligned with existing literature on factors influencing mathematics achievement. Hill & Cordova (2015) suggest that student, teacher, and school factors collectively impact mathematics achievement, mirroring the comprehensive approach taken in the analysis of various factors affecting Grade 10 students' mathematics performance. Similarly, Lubienski & Calkins (2016) and Hativa (2017) emphasize the complexity of relationships between teacher and student characteristics and mathematics achievement, which resonates with the nuanced findings of the correlation analysis, revealing no straightforward associations between these factors and academic performance.

The result is also in consonance to the study conducted by Kumtepe & Çakır's (2018) meta-analysis reinforces the significance of student background factors, such as socioeconomic status, in predicting mathematics achievement, an aspect potentially reflected in the non-significant relationships observed between parent and school factors and academic performance. Furthermore, Ghaemi & Taheri's (2020) findings on the positive relationship between parental involvement and mathematics achievement underscore the importance of family support, albeit the intricate interplay of various factors, including parental education and socio-economic status, as identified in the correlation analysis.

Lastly, Wigfield & Guthrie (2020) stress the critical role of motivation and engagement in mathematics education, echoing the emphasis on student factors in the correlation analysis. The review underscores the positive correlation between motivation and mathematics achievement, it acknowledges the multifaceted nature of this relationship, which aligns with the absence of significant associations observed in the study.

Intervention Program for Enhancing Mathematics Performance of Junior High School Students in the East Cluster of the Schools Division of Santiago City

OBJECTIVE: To address the identified factors influencing mathematics performance among Grade 10 students in the East Cluster of the Schools Division of Santiago City.
COMPONENTS
1. Support Systems Enhancement ✧ Provide additional resources such as tutoring services, academic counseling, and remedial classes to support students facing difficulties in mathematics. ✧ Implement peer mentoring programs to encourage collaboration and peer-to-peer support among students.
2. Teacher Training and Professional Development ✧ Organize regular workshops and seminars focusing on innovative instructional methods and strategies tailored to meet the diverse learning needs of students. ✧ Introduce ongoing professional development programs to enhance teachers' pedagogical skills and effectiveness in teaching mathematics.
3. Parental Engagement Initiatives ✧ Conduct workshops and informational sessions to educate parents about the importance of their involvement in their children's mathematics education. ✧ Establish communication channels and platforms to facilitate regular communication between parents and teachers, enabling them to work together to support students.
4. Collaborative Strategies Implementation ✧ Formulate multidisciplinary teams comprising teachers, parents, administrators, and community members to develop and implement comprehensive strategies addressing various aspects of students' learning needs. ✧ Foster partnerships with local organizations and businesses to provide additional resources and support for mathematics education initiatives.
5. Monitoring and Evaluation Mechanisms ✧ Establish a system for collecting and analyzing data on student progress, teacher practices, and resource allocation to inform evidence-based decision-making. ✧ Conduct regular evaluations of intervention programs to assess their effectiveness and identify areas for improvement.
TIMELINE ✧ Year 1: Implement support systems enhancement and teacher training initiatives. ✧ Year 2: Expand parental engagement initiatives and collaborative strategies implementation. ✧ Year 3: Strengthen monitoring and evaluation mechanisms and make necessary adjustments based on feedback.
PERSON'S INVOLVED ✧ School administrators, teachers, parents, community members, and educational stakeholders.
BUDGET ✧ Allocate funds for professional development workshops, parental engagement activities, peer mentoring programs, and resource procurement as necessary.
OUTCOME EVALUATION ✧ Conduct periodic assessments to measure improvements in mathematics performance, student engagement, and overall academic achievement.
SUCCESS INDICATORS ✧ Improved mathematics performance among Grade 10 students, increased parental involvement, enhanced teacher effectiveness, and positive feedback from stakeholders.

CONCLUSION

Based on the findings of the study, the following conclusions were derived:

1. The study showed that student, teacher, administrator, parent, instructional materials, teaching methods, evaluative tools, administrative support, supervisory support, and school factors slightly to moderately affect the Mathematics performance of Junior High School students. Although each factor was not extremely serious, they still present challenges that need to be addressed to improve students' learning.

2. Most Grade 10 students had good performance in Mathematics, with many students reaching the 'Proficient' and 'Approaching Proficiency' levels. However, some students still struggled, showing the need for continued support and intervention.

3. The study found no strong relationship between the non-intellectual factors and the students' Mathematics performance. This means other factors, like personal motivation or home environment, might play a bigger role in their success in Mathematics.

RECOMMENDATION

1. It is recommended that students develop consistent study habits, submit assignments and projects on time, attend classes regularly, and seek help when encountering difficulties in Mathematics to strengthen their academic performance.

2. It is recommended that teachers attend professional development programs to improve their teaching strategies, integrate modern technologies, create engaging learning activities, and formulate higher-order thinking skills (HOTS) questions to better meet students' needs.

3. It is recommended that parents actively support their children's education by providing needed school materials, assisting with homework, maintaining communication with teachers, and fostering a positive attitude towards Mathematics at home.

4. It is recommended that school administrators provide adequate instructional materials, improve classroom facilities, offer continuous support and supervision to teachers, recognize outstanding performances, and create a supportive environment that promotes Mathematics excellence.

5. It is recommended that future researchers explore additional factors such as students' personal motivation, socio-economic status, and learning styles, and consider conducting qualitative studies to gain deeper insights into the challenges and success factors affecting Mathematics performance.

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