



INFLUENCE OF PARENTAL INVOLVEMENT LEVEL ON MATHEMATICS ACHIEVEMENT AMONG GRADE 9 STUDENTS IN ARTECHE NATIONAL HIGH SCHOOL

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ABSTRACT

Parental involvement plays a vital role in shaping students' academic success and overall educational development. Several studies revealed that parental involvement such as parental educational background, parental supports, socio-economic status, and home learning environment, are some of the factors that enhances students' academic performance.

This research aimed to identify the level of parental involvement among Grade 9 students in terms of mentoring strategies, parental involvement strategies, awarding recognition strategies, and awarding recognition strategies, to identify the level of mathematics achievement among Grade 9 students, and to determine the relationship between parental involvement level and the mathematics achievement among grade 9 students in Artech National High School, focusing on four factors: Mentoring strategies, parental involvement strategies, awarding scheme strategies, and awarding recognition strategies.

The data analysis revealed several significant findings: With a mean score of 3.654, the study revealed that there is an active parental involvement among Grade 9 students in terms of mentoring strategies. While, there is a moderate parental involvement among Grade 9 learners in terms of parental involvement strategies, awarding scheme strategies, and awarding recognition strategies, with a mean score of 3.116, 2.944, and 2.608, respectively. In terms of mathematics achievement level, the study revealed that 74% of the students has a grade of 85% - 89%, shows that most of the students are proficient in mathematics subject. Lastly, the pearson's correlation analysis revealed that, with a p -values: 0.118, 0.894, and 0.082 and r -values: 0.224, -0.019, and 0.248, parental involvement level in terms of mentoring strategies, parental involvement strategies, and awarding scheme strategies, respectively, had no significant relationship with students' mathematics achievement. However, with the computed p -value of 0.016, and r -value of 0.339, a significant relationship was found between parental involvement strategies in terms of awarding recognition scheme and mathematics achievement among Grade 9 students in Artech National High School. The results implied that recognizing students' effort and learning progress enhances their learning motivation and academic performance in mathematics.

KEY WORDS: Parental Involvement, Mathematics Achievement.

INTRODUCTION

Mathematics plays a crucial role in shaping students' critical thinking and problem-solving skills, which are essential for academic and real-world success. However, students mentioned that mathematics is boring, confusing, and difficult subject in school (Aguilar, J.J. 2021), which causes their low interest and performance in the subject. Several studies found various factors affecting students' learning. One factor affecting the students' achievement in mathematics is lack of parental support, and the teachers needs training on effectively involving the parents in learning mathematics (Shikwaya, R. & Khuzwayo, B. 2024). This reason is also one of many factors that makes students less motivated and lack in appreciation on mathematics subject.

Parental involvement in their children's education is a crucial determinant of their academic achievement, encompassing diverse modes of involvement (Kantova, 2024). Parental involvement refers to the amount of participation a parent has when it comes to their children's education and academic-

related learning (Bartolome, et. Al, 2017). Factors such as parental educational background, socio-economic status, home learning environment, etc. Rusli (2017) found that parents' education level had positive impact on students' mathematics achievement. However, various aspects of parental involvement influence students' mathematical achievement differently (Huang et al., 2021), such as academic monitoring, moral support, and help with schoolwork, that has been found to grow students' confidence and drive to learn mathematics and improve their academic performance in the subject (Rodriguez et al., 2017; Silinskas & Kikas, 2019). In the context of learning mathematics, students tend to feel more confident, have higher motivation and discipline, and are encouraged to learn mathematics more effectively when their parents are involved in the process of learning (Purnomo et al., 2021; Wu et al., 2022).

Though several studies have explored the relationship of parental involvement such as parental education background and socio-economic status as factors influencing students'



mathematics achievement. However, other factors focusing on parental involvement strategies are limited, leaving a gap in understanding how parents' participation and active involvement in their children education and school greatly impact students' learning outcome. Thus, this study aimed to bridge the gap in understanding other factors involving parental involvement influencing the mathematics achievement of students from local school particularly in Arteche National High School.

Thus, this study sought to determine the influence of parental involvement level focusing on four different factors, such as mentoring strategies, parental involvement strategies, awarding schemes and recognition schemes strategies, on mathematics achievement among the Grade 9 students of Arteche National High School, and to explore potential relationship between variables.

Objectives

1. To identify the level of parental involvement among Grade 9 students in terms of:
 - 1.1 Mentoring strategies;
 - 1.2 Parental involvement strategies;
 - 1.3 Awarding scheme strategies; and
 - 1.4 Awarding recognition strategies.
2. To identify the level of mathematics achievement of the Grade 9 students.
3. To determine whether there is a significant relationship between:
 - 3.1 Mentoring Strategies and mathematics achievement.
 - 3.2 Parental Involvement Strategies and Mathematics achievement.
 - 3.3 Awarding Scheme Strategies and Mathematics achievement.
 - 3.4 Awarding Recognition Strategies and mathematics achievement.

METHODOLOGY

This study employed a descriptive-correlational quantitative design which aimed to determine whether a significant relationship exists between the level of parental involvement and the mathematics achievement among Grade 9 students in Arteche National High School. A descriptive method was used to determine the level of parental involvement and students' academic achievement level in mathematics. A correlational study was used to examine the relationship or connection between the level of parental involvement and students' academic performance in their mathematics subject. While a quantitative method was used to evaluate and analyze quantified data by using various statistical tools needed for the development of this study.

Sampling Design

This study employed simple random sampling technique to ensure fair representation of Grade 9 students in Arteche National High School. The study comprised the total of 50 Grade 9 students to represent the entire population of this study. The respondents were selected randomly from different sections of Grade 9 level, regardless of gender, socio-economic

status, and academic achievement level, to ensure that every student has an equal chance of being selected.

Statistical Design

A descriptive analysis such as frequency count, percentage, weighted mean, and grand mean were used to evaluate and analyze the level of parental involvement and mathematics achievement among Grade 9 students. To determine whether a statistically significant relationship exist between variables, a Pearson Product-Moment Correlation Coefficient (r) was used to determine the strength and direction of the relationship between parental involvement level and mathematics achievement of the Grade 9 students of Arteche National High School.

Geographical Area

This study was conducted at Arteche National High School, Brgy. Rawis, Arteche Eastern Samar, located at the northern part of Eastern Samar. This educational institution offers both junior and senior high school education and do practice school-based management. The selection of this locale was based on the accessibility and convenience of the researchers.

RESULTS

I. Level of Parental Involvement in terms of Mentoring Strategies.

Among the statements evaluated in table 1, the statement "My parents reminded me about the importance of going to school" received the highest mean of 4.86, which interpreted as "Frequently". This indicates that there is a comprehensive parental involvement among Grade 9 students. On the other hand, the statement "My parents helped me with my math homework" received the lowest mean of 2.27 which is interpreted as "Rarely". This indicates that parents are occasionally involved in their child's academic homework. The grand mean of 3.654 is interpreted as "Often", suggests that overall, parents are actively involvement in their child education in terms of mentoring strategies, particularly in their mathematics lesson.

II. Level of Parental Involvement in Terms of Parental Involvement Strategy

Table 2 presented the level of parental involvement in terms of parental involvement strategies. With a highest mean score of 4.24 in the statement "My parents initiated meetings with other parents for activities that would benefits the children" is interpreted as "Often", indicates that parents' involvement with school activities is active. On the other hand, the statement "My parents initiated small talks with teachers about my learning progress in mathematics" received the lowest mean score of 2.12 which is interpreted as "Rarely". This indicates that parents are occasionally asked teachers about the learning progress of their child in mathematics. The overall mean score of 3.116 which is interpreted as "Sometimes" indicates that parents had moderate involvement in their child education by attending and participating in school activities.

III. Level of Parental Involvement in terms of Awarding scheme strategies

Table 3 presented the level of parental involvement in terms of awarding scheme strategies. With a highest mean score of 4.14,



interpreted as “Often”, on the statement “My parents granted me independence and freedom in my study methods” indicates that parents are actively provide freedom on their child’s study habit and learning independence that makes learning meaningful and effective for them. With a lowest mean score of 2.12, interpreted as “Rarely” on the statement “my parents rewarded me with a letter of appreciation”, indicates that parents are occasionally rewarded their child with letter of appreciation. With a grand mean of 2.944, interpreted as “Sometimes” indicates that, overall, parental involvement in terms of awarding scheme strategies is moderate.

IV. Level of Parental Involvement in terms of Awarding recognition strategies

Table 4 presented the level of parental involvement in terms of awarding recognition strategies. With a mean score of 3.02 on the statement “My parents recognized my good performance in mathematics test” is interpreted as “Sometimes” which means parents sometimes recognized their child learning progress in mathematics. With a lowest mean score of 2.36, interpreted as “Rarely” on the statement “My parents hold simple events to recognize my achievements in mathematics”, shows that parents are occasionally hold events for their child achievement in mathematics. With a grand mean of 2.608, which is interpreted as “Sometimes”, indicates that, overall, parental involvement in terms of awarding scheme strategies is moderate.

V. Level of Mathematics Achievement of the Grade 9 Students.

The result showed in table 5 revealed that 37 out of 50 or 74% of the students has a grade of 85%-89%, interpreted as “proficient”, shows that most of the students are proficient in mathematics subject. 5 out of 50 of the students has a grade of 90% and above indicates that only 10% of the students are interpreted as advanced in the subject. 8 out of 50 or 16% of the students has the grades of 80%-84% indicates that 16% of the students are interpreted as “Approaching Proficient” in the subject. While none of the respondent have a below 84%. With a grade mean of 86.64% indicates that most of the students are proficient in mathematics subject.

VI. Relationship between parental involvement level in terms of: mentoring strategies, parental involvement strategies, awarding scheme strategies, and awarding recognition scheme strategies, and mathematics achievement among grade 9 students.

The results showed that the computed p-values of 0.118, 0.894, and 0.082 and r-values of 0.224, -0.019, and 0.248 on the level

of parental involvement in terms of mentoring strategies, parental involvement strategies, and awarding scheme strategies, respectively, do not have significant influence on students’ mathematics achievement. However, with the computed p-value of 0.016, and r-value of 0.339 indicates that, parental involvement in terms of awarding recognition schemes significantly influences students’ academic performance in mathematics subjects. The results implied that when a child’s achievements and progress are recognized, their motivation in learning increases as well as their academic performance.

SUGGESTIONS

Parents should be more involve in their child education, specifically in giving recognition and appreciation in their academic achievement. Teachers should emphasize giving regular awards and recognition to students who exert efforts in learning and those who did well in the subject. The school administration may consider implementing structured programs and seminars that foster meaningful and parental engagement and strengthen collaboration between home and school. Future researchers are encouraged to conduct a parallel or expanded studies that examine different or additional factors to gain a broader understanding of the determinants of mathematics achievements.

CONCLUSION

Based on the results, the following conclusion are drawn: parents are more active on their child education in terms of mentoring strategies, while the level parental involvement in terms of parental involvement strategies, awarding scheme strategies, and awarding recognition strategies were moderate. These implies that parental involvement among Grade 9 students were observed. Majority of the students are proficient in mathematics. Indicating that success in the mathematics program is equipping students with the necessary skills and knowledge. Based on the statistical analysis results, the study concluded that the parental involvement level in terms of mentoring strategies, parental involvement strategies, and awarding scheme strategies had no significant relationship with mathematics achievement. However, a statistically significant relationship was found between parental involvement level in terms of awarding recognition strategies and mathematics achievement. This implies that when students are recognized with their effort and progress, the more they are motivated in improving their academic outcome.



TABLES

Table 1. Level of Parental Involvement in terms of mentoring strategies

Statement	Mean	Interpretation
1. My parents reminded me about the importance of going to school.	4.86	Frequently
2. My parents conversed with me about what happened in school after my class.	3.92	Often
3. My parents reminded me of essence of mathematics in everyday life.	3.98	Often
4. My parents tutored me in math lessons I found difficult.	3.24	Sometimes
5. My parents helped me with my math homework.	2.27	Rarely
Average	3.654	Often

Table 2. Level of Parental Involvement in terms of parental involvement strategies

Statement	Mean	Interpretation
1. My parents participated in school programs when invited by the school (e.g., family day).	3.18	Sometimes
2. My parents attended regular progress meetings with teachers (e.g., showing of report cards).	3.74	Often
3. My parents initiated meetings with other parents for activities that would benefit the children.	4.24	Often
4. My parents initiated small talks with teachers about my learning progress in mathematics.	2.12	Rarely
5. My parents volunteered to work for the school (e.g., cleaning drives, bringing refreshments during activities, sharing stories with my child's class).	2.30	Rarely
Average	3.116	Sometimes

Table 3. Level of Parental Involvement in terms of awarding scheme strategies

Statement	Mean	Interpretation
1. My parents granted me independence and freedom in my study methods.	4.14	Often
2. My parents gave me monetary rewards for my good performance in mathematics.	3.14	Sometimes
3. My parents handed me a tangible gift.	3.00	Sometimes
4. My parents rewarded me with a letter of appreciation.	2.12	Rarely
5. My parents extended non-monetary rewards, like educational trips, for outstanding performance in mathematics.	2.32	Rarely
Average	2.944	Sometimes

Table 4. Level of Parental Involvement in terms of awarding recognition strategies

Statement	Mean	Interpretation
1. My parents recognized my good performance in mathematics tests.	3.02	Sometimes
2. My parents gave recognition to my meritorious accomplishments in mathematics.	2.50	Rarely
3. I have simple events organized by my parents to recognize my achievements in mathematics.	2.46	Rarely
4. My parents hold simple events to recognize my achievements in mathematics.	2.36	Rarely
5. My parents displayed congratulatory messages (like tarps) for my outstanding achievements in mathematics.	2.70	Sometimes
Average	2.608	Sometimes



Table 5. Students' mathematics achievement

Academic Performance	Frequency	Percentage	Descriptors
90% and above	5	10%	Advanced
85% – 89%	37	74%	Proficient
80% – 84%	8	16%	Approaching Proficient
75% – 79%	0	0%	Developing
74% and below	0	0%	Beginning
Mean		86.64%	Proficient

Table 6. Relationship between the level of parental involvement and mathematics achievement

Parental Involvement	Mean	Mathematics Achievement	r-value	p-value	Decision
A. Mentoring strategies	3.654	Average grade is 86.64%	0.224	0.118	Accept null hypothesis
B. Parental involvement strategies	3.116		-0.019	0.894	Accept null hypothesis
C. Awarding scheme strategies.	2.944		0.248	0.082	Accept null hypothesis
D. Awarding Recognition strategies.	2.608		0.339	0.016	Reject null hypothesis

The level of significance is set at 0.05

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