# Parental Engagement and Pupils' Attitude: Its Relationship to Mathematics VI Performance

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**Abstract**

This study aimed to determine the parental engagement, pupils' attitude and academic performance in Mathematics of Southwest II-District Elementary School, Cagayan de Oro City, this School Year 2022-2023. Specifically, this paper sought to do the following: the extent of parental engagement in terms of home engagement; and school engagement; the extent of pupils' attitude towards mathematics in terms of mathematical value; and mathematics enjoyment; to find out the level of pupils' performance in mathematics as measured by their second quarter grade; and to determine the significant relationship between the pupils' performance and parental engagement and pupils' attitude. Questionnaire checklist was the main tool used in generating the necessary data of the study. Correlational design was used in the study. Mean, standard deviation, and Pearson Coefficient of Correlation were the statistical treatment employed in interpreting the data. The parents were highly engaged at home and at school on the academic undertakings of their child. The pupils had a very high positive attitude towards mathematics and their overall performance was satisfactory. Parental engagement and mathematical value as construct of attitude had no significant association with the pupils performance in mathematics. On the other hand, mathematical enjoyment as construct to attitude was statistically associated with their performance in mathematics.

Keywords: Parental, Engagement, Attitude, Mathematics, Performance

## 1. Introduction

Parents' engagement in terms of their children's learning greatly affect their performance. As teachers find ways and means to cater to the needs of their learners they need to tap the parents to have a constant communication in terms of the learning of their children. Even pandemic did not hinder the parents to achieve such goal for the betterment of the learners. Getting parents involved can be more productive for everyone and it has a positive impact on the achievements of the learners. It is hard to motivate the learners to perform well in the class especially in Mathematics if at home the parents will not get involved with.

Parental engagement most often refers to parents' engagement in their child's learning at home, at school, and in the wider community. Parental engagement is supported by discussion between parents and practitioners and focuses on how families can build on what they already do to help their children's learning and provide a supportive home learning environment (National Improvement Hub, 2021). In addition, with the parents engagement in the education of their children, they perform better in school when their parents are involved with their schoolwork compared to pupils whose parents are uninvolved. Pupils with involved parents get better grades. These effects remain in the future, even if parents become less involved as the child ages. Parents' involvement in school-based activities seems to have the greatest effect on child's grades, but home-based parents' involvement also plays at least some role (Gonzalez-DeHass, 2019).

On the other hand, the academic performance of the learners can also be influenced by how they feel or their attitude towards the subject. Baidoo (2022) stressed that pupils' attitude towards Mathematics is a major influence on and determine their performance in the discipline. Furthermore, Sanchal and Sharma

(2017) noted that as the proportion of learners who likes Mathematics increases, there is a corresponding increase in learners' enjoyment in Mathematics lessons. Attitudes towards school and learning are associated with academic achievement. Pupils with poor academic performance have a more negative attitude towards learning and believe that school and learning will not help them being successful in the future (Short Facts, 2020).

Filipino pupils scored lowest among 58 countries who took the International Assessment for Mathematics and Science, the Trends in International Mathematics and Science Study 2019 (TIMSS). Pupils from the Philippines only got 297 in Mathematics which are significantly lower than any other country who participated in the tests. The national scenario of pupils' performance in Mathematics likewise reflects the performance of the learners in the school where the researcher is assigned. It is in these contexts that the researcher was motivated to conduct this study to find out if parental engagement and pupils' attitude will have a significant association with their Mathematics performance. Hence, this study was conceptualized.

The study was anchored on the theory of Bronfenbrenner's Ecological Systems Theory. According to this theory, a child's development occurs within an ecological system that contains multiple environments or systems that interact to shape the child as they grow into an adult. The key aspect of this theory is the notion that there are multiple aspects in a child's life that significantly impact their development. To illustrate this aspect of his model, Bronfenbrenner theorized that the child's general environment is made of concentric circles where they are at the center. The closer the layers are to the child, the more influence that system has on children's experiences (Hartin, 2022).

Furthermore, the family is the most important aspect of a child's microsystem. It is through family-child interactions that children have several fundamental experiences, such as learning how to bond with others, learning language, and learning how to resolve social conflicts. The style parents use to interact with their children also has significant long-term effects on their development. The family serves as the primary source for children to learn how to grow into healthy, competent, and independent adults.

The settings in a child's microsystem are connected by the mesosystem. For example, parents often become involved in a child's school life by contacting teachers and attending parent-teacher conferences. This interaction between a child's home and school life can have a tremendous impact on their educational outcomes. Children also frequently bring schoolwork home, which influences the types of activities that occur in the household. Children's experiences in the microsystem are also shaped by the exosystem.

In like manner, Lima and Kuusito (2019) stressed that parents play a significant role in supporting their children's health and learning, guiding their children successfully through school processes, and advocating for their children and for the effectiveness of schools. Parental engagement in schools is defined as parents and school staff working together to support and improve the learning, development, and health of children and adolescents.

Another theory that served as the foundation of this study was the Attitude Formation Theory that explains how a person's attitude develops and why a person may have a particular attitude, or how that attitude came to exist (Unacademy, n.d.). More so, an attitude is a general and long-lasting positive or negative opinion or feeling about a person, object, or problem. Attitudes are developed through direct experiences, social influence, or media exposure. They are built on three pillars: emotions, behavior, and cognition.

In addition, a positive attitude is a state of mind that focuses on the good and potential in things, situations, and people. This can be contrasted with a negative attitude that views things in a cynical, pessimistic, or generally unfavorable light. A positive attitude tends to be more productive Spacey (2021). Attitude can also be gender related. There are many who hold the view that boys do better in Mathematics than girls. This belief tends to affect the attitude of girls towards Mathematics Okyere and Kuranchie (2019).

Moreover, attitudes can be seen as more or less positive. A positive attitude towards Mathematics reflects a positive emotional disposition in relation to the subject and, in a similar way, a negative attitude towards Mathematics relates to a negative emotional disposition. These emotional dispositions have an impact

on an individual's behavior, as one is likely to achieve better in a subject that one enjoys, has confidence in or finds useful. For this reason, positive attitudes towards Mathematics are desirable since they may influence one's willingness to learn and the benefits one can derive from Mathematics instruction.

## 2. Methodology

The study made used of descriptive - correlational research design. Katzukov (2020) explained that descriptive correlation studies describe the variables and relationships that occur naturally between them. Furthermore, correlational research design as used by researchers to describe and measure the degree of association between two or more variables or sets of scores. The procedure which subjects score on two variables is measured without manipulating any variables to determine whether there is a relationship. The statistical tools used in the analyses of the data were the following: Mean and Standard Deviation was used for Problems 1-3 to determine the extent of parental engagement, extent of pupils' attitude towards Mathematics, and Frequency and Percentage for the pupils' performance for the Second Quarter. Pearson Product-Moment Correlation Coefficient was utilized for Problem 4 to find the relationship between the Independent and Dependent Variables.

## 3. Results and Discussions

**Problem 1.** To what extent is the parental engagement of the parents in terms of:

1.1 home engagement; and

1.2 school engagement?

**Table 1**

Parental Engagement at Home

| Indicators | Mean | SD | Description | Interpretation |
|---|---|---|---|---|
| 1. My parent spend time with me every day to follow up on my lesson. | 4.56 | .50 | Strongly Agree | Very High |
| 2. I am tutored by my parent. | 4.49 | .50 | Strongly Agree | Very High |
| 3. My parents prepare nutritional food for me | 4.61 | .49 | Strongly Agree | Very High |
| 4. My parents regulate my television viewing and game time. | 4.51 | .50 | Strongly Agree | Very High |
| 5. My parent assisted me in doing my assigned tasks | 4.56 | .50 | Strongly Agree | Very High |
| 6. My parents help me in doing my project. . | 4.60 | .49 | Strongly Agree | Very High |
| 7. My parents regulate my time in using gadgets such as cellphone, computer, and tablets | 4.68 | .47 | Strongly Agree | Very High |
| 8. My parents send letter to my teacher if there is problem/ urgent matter at home. | 4.67 | .48 | Strongly Agree | Very High |
| 9. My parents assist me to accomplish my schoolwork and activities. | 4.56 | .50 | Strongly Agree | Very High |
| **Overall Mean** | **4.58** | **.49** | Strongly Agree | Very High |

**Note:** 4.21 – 5.00 Very High; 3.41 – 4.20 High; 2.61 – 3.40 Moderately High; 1.81 – 2.60 Low; 1.00 – 1.80 Very Low

Table 1 presents the extent of parental engagement at home. It has an overall Mean of 4.58 with SD=.49 which is described as Strongly Agree and interpreted as Very High. It can be deduced from the table that the parents are very highly engaged in the education of their child at home. It can also be noticed that all the nine indicators of parental engagement at home are interpreted as Very High extent. This implies that the parents are actively engaged in extending their assistance with their children when it comes to schoolwork at home. Most likely, the parents firmly believed that extending their assistance to their children in their school tasks will improve their academic performance. Studies have found that children perform better in school

when their parents are involved with their schoolwork compared to children whose parents are uninvolved. Children with involved parents get better grades and are thought more highly of by teachers (Thill, 2020).

The indicator, My parents regulate my time in using gadgets such as cellphone, computer and tablets, got the highest Mean of 4.68 with a SD=.47 which is described as Strongly Agree and interpreted as Very High extent. This indicates that the parents are actively engaged with the activities of their children at home especially in controlling the time spent of their child in using gadgets. Although, at present children are already exposed to gadgets as their way to get information but the parents monitor their children's exposure to gadgets so that it these have no adverse effects on their academic performance. Othman et al. (2020) in their study found out that pupils who spent more time on electronic gadget use has high level of dependency towards gadget, poor academic achievement, and poor health status.

Furthermore, the indicator, I am tutored by my parent, obtained the lowest Mean of 4.49 with SD=.50 which is described as Strongly Agree and Interpreted as Very High extent. This means that the parents sometimes cannot assist their children in doing their assignments. This is due to the fact that there are parents who are not able to graduate in the elementary. More so, some topics under the Grade VI curriculum are complex and complicated especially in Mathematics and Science. This might be the reason why the pupils rated this low among the nine indicators.

**Table 2**
Parental Engagement in School

| Indicators | Mean | SD | Description | Interpretation |
|---|---|---|---|---|
| 1. My parents support me in my co-curricular activities such as sports in school. | 4.21 | 1.07 | Strongly Agree | Very High |
| 2. My parents volunteer in school activities, such as "Brigada Eskwela". | 3.81 | 1.18 | Agree | High |
| 3. My parents volunteer to become one of the classroom aides. | 3.58 | 1.24 | Agree | High |
| 4. My parents allow me to join in "Field trips." or Educational Tour. | 3.62 | 1.21 | Agree | High |
| 5. My parents get most of information, about my progress from report cards. | 4.06 | 1.03 | Agree | High |
| 6. My parents communicate with my teacher to follow up my class performance. | 3.91 | 1.19 | Agree | High |
| 7. My parents attend school meetings and PTA meetings. | 4.10 | 1.03 | Agree | High |
| 8. My parents attend parent's conference and consultation. | 3.79 | 1.13 | Agree | High |
| 9. My parents volunteer in the School Based Feeding Program. | 3.55 | 1.40 | Agree | High |
| **Overall Mean** | **3.84** | **1.16** | Agree | High |

**Note:** 4.21 – 5.00 Very High; 3.41 – 4.20 High; 2.61 – 3.40 Moderately High; 1.81 – 2.60 Low; 1.00 – 1.80 Very Low

Table 2 reveals the extent of parental engagement in school. It has an Overall Mean of 3.84 with SD=1.16 which is described as Agree and interpreted as High extent. It can be gleaned from the table that the parents are highly engaged with their children's activities in school. This means the parents are highly involved in school activities of their children. Parents' involvement activities that benefit children's educational development are to communicate with the teachers and school; discuss school activities with children; and monitor and supervise school activities (Keith, 2020).

Moreover, the indicator, My parents support me in my co-curricular activities such as sports in school, obtained the Highest Mean of 4.21 with SD=1.07 which is described as Strongly Agree and interpreted as Very High extent. This means that the parents are highly involved in the co-curricular activities

of their children in school such as sports and other school related undertakings. The benefits of parental partnership with schools are immense not just for the school but for the children too. Moreover, children whose parents are more engaged in their school activities and help them with their homework have bigger grades and score better on any academic tests. No matter their income or background, pupils with involved parents are more likely to have higher grades and test scores, attend school regularly, have better social skills, show improved behavior, and adapt well to school (Spark, 2022).

The indicator, My parents volunteer in the School Based Feeding Program, got the Lowest Mean of 3.55 SD=1.40 described as Agree and interpreted as High extent. This means that the parents are less involved as volunteer in the School Based Feeding Program. Perhaps this can be attributed to the fact that during the pandemic the feeding program was not in person conducted hence, the parents are less engaged in this activity.

**Problem 2.** To what extent is the pupils' attitude towards Mathematics in terms of:

2.1 Mathematical Value; and

2.2 Mathematics Enjoyment?

**Table 3**

*Pupils' Attitude in* Terms of Mathematical Value

| Indicators | Mean | SD | Description | Interpretation |
|---|---|---|---|---|
| 1. The mathematics we learn at school is useful in other subjects. | 4.51 | .80 | Strongly Agree | Very Highly Positive |
| 2. Mathematics is an extremely advantageous and fundamental subject. | 4.61 | .74 | Strongly Agree | Very Highly Positive |
| 3. I would like a job that involves using mathematics. | 4.23 | .91 | Strongly Agree | Very Highly Positive |
| 4. Mathematics is a standout amongst the most important subjects to consider. | 4.42 | .90 | Strongly Agree | Very Highly Positive |
| 5.Learning mathematics is important for getting a job in the future. | 4.38 | .90 | Strongly Agree | Very Highly Positive |
| 6.I can imagine choosing a career connected to Mathematics. | 4.05 | 1.15 | Agree | Highly Positive |
| 7.We cannot survive without using Mathematics. | 3.48 | 1.28 | Agree | Highly Positive |
| **Overall Mean** | **4.24** | **.95** | Strongly Agree | Very Highly Positive |

**Note:** 4.21 – 5.00 Very Highly Positive; 3.41 – 4.20 Highly Positive; 2.61 – 3.40 Moderately Positive; 1.81 – 2.60 Negative; 1.00 – 1.80 Very Negative

Table 3 shows the pupils' attitude towards Mathematics in terms of Mathematical Value. It can be deduced that the pupils have a Very Highly Positive attitude towards Mathematical Value as revealed by the Overall Mean of 4.24 with SD=.95 which is described as Strongly Agree and interpreted as Very Highly Positive. This means that the pupils considered Mathematics as a valuable subject. Further, this implies that the pupils value the importance of Mathematics in learning other subject areas. Several studies have demonstrated that attitudes towards Mathematics are directly and significantly associated with pupils' performance (Blazar & Kraft, 2017). Furthermore, perceived usefulness of Mathematics is believed to have an influence on pupils' attitude towards the subject. If pupils recognize the importance of Mathematics in their lives, they would become motivated to study, practice, and learn the subject. This indicates pupils' recognition of the value of Mathematics in their lives and future careers.

The indicator, Mathematics is an extremely advantageous and fundamental subject, obtained the Highest Mean of 4.61 with SD=.74 described as Strongly Agree and interpreted as Very Highly Positive attitude. This entails that the pupils have a high regard for Mathematics as a subject and esteem this as a core subject in learning other subject areas. According to Dushi (2021) Mathematics has a great practical value.

Everyone uses Mathematics in every form of life. Moreover, a common man sometimes can do without reading or writing but he cannot do without counting and calculating. Any person who is ignorant of Mathematics can be easily cheated. Perhaps these are the reasons why the pupils have a highly positive attitude towards this indicator.

On the other hand, the indicator, We cannot survive without using Mathematics, got the Lowest Mean of 3.48 SD=1.28 described as Agree and interpreted as Highly Positive. Although, the pupils considered Mathematics as established earlier on their responses however, they rated this low among all indicators because they can still go on with their lives without Mathematics but not as effective if they can have it in their day-to-day undertakings.

Table 4 on the next page reveals the extent of Mathematical Enjoyment of the pupils. It can be observed in the table that all eight indicators of Mathematical Enjoyment are interpreted as Highly Positive as indicated by the Overall Mean of 4.04 with SD=1.01. This means that the pupils enjoy learning Mathematics. It can also be noted from the table that all the eight indicators of Mathematical Enjoyment got an interpretation of Highly Positive. Further, this entails that the pupils are having fun in learning the subject. Enjoyment in learning Mathematics is often perceived to be a positive, desirable emotion in the learning process Barnes (2020).

**Table 4**

*Pupils' Attitude in terms of Mathematical Enjoyment*

| Indicators | Mean | SD | Description | Interpretation |
|---|---|---|---|---|
| 1. I have for the most part appreciated considering math in school. | 3.90 | 1.00 | Agree | Highly Positive |
| 2.Mathematics is an interesting subject. | 3.98 | 1.13 | Agree | Highly Positive |
| 3. I like to take care of new issues in mathematics. | 4.11 | 1.07 | Agree | Highly Positive |
| 4. I would want to complete a task in math than to compose an exposition. | 4.11 | 1.05 | Agree | Highly Positive |
| 5. I like mathematics. | 4.11 | .92 | Agree | Highly Positive |
| 6. I am happier in a mathematics class than in any other class. | 3.96 | .99 | Agree | Highly Positive |
| 7. Mathematics is a fascinating subject. | 4.20 | .92 | Agree | Highly Positive |
| 8. I am open to communicating my thoughts on the most proficient method to search for answers for a troublesome issue in mathematics. | 4.05 | .96 | Agree | Highly Positive |
| **Overall Mean** | **4.05** | **1.01** | **Agree** | **Highly Positive** |

**Note:** 4.21 – 5.00 Very Highly Positive; 3.41 – 4.20 Highly Positive; 2.61 – 3.40 Moderately Positive; 1.81 – 2.60 Negative; 1.00 – 1.80 Very Negative

The table also reveals the indicator rated high by the pupils. The indicator, Mathematics is a fascinating subject, acquired the Highest Mean of 4.20 with SD=.92 described as Agree and interpreted as Highly Positive attitude. This means that the pupils find Mathematics as extremely an interesting subject. This fashion for Mathematics can be used by teachers for the pupils to learn other subject areas using their interest in Mathematics. Further, this would also mean that the teachers teaching Mathematics are equipped with the appropriate pedagogies and methodologies in teaching the subject. Marzana et al. (2018) pointed out that factors responsible for pupils liking of Mathematics are good teaching and course enjoyment. While factors such as boring teachers, pupils' failure to solve Mathematical problems, failure to understand the topic well, friends talking during lectures, receiving a bad grade for an examination are related to the pupils' disliking of Mathematics.

On the other hand, the table also reveals the indicator rated low by the pupils. The indicator, I have for the most part appreciated considering Mathematical in school obtained the Lowest Mean of 3.90 with SD= 1.00 which is described as Agree and interpreted as Highly Positive attitude. This entails that few of the

pupils had lesser passion or interest in Mathematics and this is a big challenge to teachers on how teach this subject interesting and enjoyable to pupils.

**Problem 3.** What is the level of pupils' performance in Mathematics as measured by their second quarter grade?

**Table 5**
*Pupils' Performance in* Mathematics

| Categories | Frequency | Percentage | Mean | Standard Deviation | Interpretation |
|---|---|---|---|---|---|
| Outstanding | 37 | 22.70 | | | |
| Very Satisfactory | 31 | 19.02 | 84.04 | 5.75 | Satisfactory |
| Satisfactory | 58 | 35.58 | | | |
| Fairly Satisfactory | 37 | 22.70 | | | |

Table 5 presents the pupils' performance in Mathematics. The average grade of all the pupils who were respondents in this study is between 80-84 which belongs to Satisfactory rating as can be seen in the frequency of 58 or 35.58 percent. No pupils belong to Did Not Meet Expectations which is between 74 and below. The least number of pupils at the frequency of 31 or 19.02 percent belong to Very Satisfactory rating which is between 85-89 grades.

This means that on the average the Mathematics performance of the pupils is at the average level not too low not too high. This may be attributed to the High positive attitude of the pupils towards the subject. Baidoo (2022) stressed that attitudes of pupils toward Mathematics learning can affect and influence their Mathematics results, which in turn can limit their access to taking advantage of opportunities offered by Mathematics.

**Problem 4.** Is there a significant relationship between parental engagement and pupils' attitude and the pupils' performance?

**Table 6**
Correlation Analysis between Parental Engagement, Attitude, and Performance

| Independent Variables | R-value | P-value | Decision on Ho | Interpretation |
|---|---|---|---|---|
| Parental Engagement at Home | .018 | .822 | Accept | Not Significant |
| Parental Engagement at School | .031 | .691 | Accept | Not Significant |
| Mathematical Value | .095 | .227 | Accept | Not Significant |
| Mathematical Enjoyment | .039 | .024 | Reject | Significant |

Table 6 presents the correlation analysis between parental engagement, attitude, and pupils performance in Mathematics. It can be deduced from the table that the parental engagement at home with R-value=0.18 and P-value=.822>.05; parental engagement at school with R-value=.031 and P-value=.691>.05; and mathematical value with R-value=.095 with P-value=.227>.05 were found not statistically related to pupils' Mathematics performance. Thus, the null hypothesis was accepted for this ground. On the other hand, Mathematical enjoyment with R-value=.039 with P-value.024<.05 was statistically related to pupils' Mathematics performance. Therefore, the null hypothesis was rejected on this reason.

The findings suggest that the extent of parental engagement at home and at school as well as the Mathematical value as measure of pupils' attitude towards Mathematics had no bearing on the pupils performance in Mathematics. Whereas the Mathematical enjoyment as construct of attitude found to be associated with the pupils' performance in mathematics. This was in support of the study conducted by Naungayan (2022) which revealed that a pupil's attitude towards the subject is related to their performance in

the subject.

Several studies have demonstrated that attitudes towards Mathematics are directly and significantly associated with pupils' performance (Blazar & Kraft, 2017). Furthermore, perceived usefulness of Mathematics is believed to have an influence on pupils' attitude towards the subject. If pupils recognize the importance of Mathematics in their lives, they will become motivated to study, practice, and learn the subject. This indicates pupils' recognition of the value of Mathematics in their lives and future careers.

## 4. Conclusions and Recommendations

Based on the significant findings of the study the following conclusions are drawn:

1. The pupils observed and witnessed their parents' involvement with their school-works at home and in school based on the rating that the pupils gave in the indicators of parental engagement.

2. The pupils have a very high positive attitude towards Mathematics value and Mathematical enjoyment. The teachers may use this positive attitude to enhance the performance of the pupils in Mathematics and also in using their interest in Mathematics to learn other subject areas.

3. The satisfactory performance of the majority of the pupils can be enhanced by the teachers by using their positive attitude in the Mathematics subject.

4. Parental engagement had no significant bearing on the pupils' performance in Mathematics. On the contrary, the attitude of the pupils towards the subject is significantly associated with their performance in Mathematics. The more positive their attitude the better is their performance in Mathematics.

From the significant findings and conclusions of the study the following are offered:

1. The parents may continue and even exert more effort in their engagement in their child's academic endeavors at home and in school.

2. The teacher may emphasize the relevance or importance of Mathematics in our daily lives to create a more positive attitude of the pupils in the subject. Moreover, the teachers may come up with strategies that the pupils may have fun and enjoyment in learning Mathematics.

3. Activity and technology-based approach may be employed by the teacher in teaching Mathematics to enhance the performance of the pupils particularly those who are at the Satisfactory level to reach the Very Satisfactory or even at the Outstanding level.

4. A related study with a wider scope and additional variables may be conducted in the future.

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