

Factors Influencing Mathematics Performance of Key Stage 2 Learners at Ambaguio Central School

¹Madlyn A. Waya, ²Jovelyn B. Cudiaman, ³Jonalyn G. Tambaling

Nueva Vizcaya State University

¹madlyn.waya9797@gmail.com, ²jovelyn.cudiaman@deped.gov.ph, ³jonalyn.tambaling@gmail.com

Article Details:

Received: 16 September 2026

Revised: 21 September 2026

Accepted: 26 September 2026

Published: 30 September 2026

Corresponding Email:

madlyn.waya9797@gmail.com

Recommended Citation:

Waya, M. A., Cudiaman, J. B., & Tambaling, J. G. (2026). Factors Influencing Mathematics Performance of Key Stage 2 Learners at Ambaguio Central School. *The International Review of Multidisciplinary Research*, 1 (11), 201-214. <https://doi.org/10.67167/vertex.751>

Index Terms:

mathematics performance, key stage 2, learner-related factors, teacher-related factors, study habits

Abstract. Mathematics Performance, learner-related factors such as interest, attitude, and study habits, and teacher-related factors such as personality traits, teaching skills, and instructional materials. The study employed a descriptive-inferential research design involving 74 pupils from Grades 4, 5, and 6. Data were gathered through a researcher-made questionnaire and mathematics assessment results. The collected data were analyzed using frequency, percentage, weighted mean, t-test, ANOVA, and Pearson correlation to determine the factors associated with pupils' Mathematics Performance. The findings revealed that most of the respondents demonstrated a Fairly Satisfactory level of Mathematics Performance. Learner-related factors were generally experienced often, while teacher-related factors were generally experienced often to always, indicating that pupils commonly encountered supportive learning conditions and teacher practices. Significant differences in Mathematics Performance were found when respondents were grouped according to grade level, mothers' highest educational attainment, and mothers' occupation. Moreover, significant relationships were found between Mathematics Performance and mothers' highest educational attainment, mothers' occupation, and pupils' study habits. These findings suggest that both learner and family-related factors contribute to differences in pupils' Mathematics Performance. The study concludes that developing effective study habits and strengthening family support may help improve pupils' performance in Mathematics. It also highlights the importance of providing appropriate, engaging, and supportive learning experiences that address pupils' needs and encourage active participation in Mathematics learning.

Introduction

Mathematics is generally considered as the most important subject at school levels all over the world. All the major commissions and committee report on education since independence emphasized the importance of mathematical knowledge and its utilitarian values. In spite of all these reports and recommendation still in the Philippines, many students struggle with mathematics and become disaffected as they constantly bump in two obstacles to engagement. It is an agreeable fact that, amongst the subject taught in schools, mathematics is considered as one of the toughest subjects. But the reason behind this might be different in different situations. Lot more studies were conducted in this area and researches come up with their recommendations as well. But still, the problem of low performance in mathematics appears to be pertinent in all levels of school education. This is a serious issue to be tackled possibly by the teachers concerned and even the Department of Education (Cordell II & Lapinid, 2022; Department of Education, 2019).

According to the Program for International Student Assessment (PISA) 2022, students in the Philippines remain among the world's weakest in math, reading and science, with recent test scores showing no significant improvement from the country's performance in 2018.

Similar to 2018, the latest PISA scores show the Philippines performed worse than the global average in all categories, with its placement in the country rankings moving up by just a few spots above countries that dropped ranks due to the pandemic's impacts on student learning.

In the 2018 PISA mathematics rankings, the Philippines placed third-lowest globally, outperforming only Cambodia and the Dominican Republic. The second-lowest performer was Panama, while the Philippines ranked just above it. Other countries that also ranked low in mathematics included Lebanon (4th-lowest), Kosovo (5th-lowest), the Dominican Republic (6th-lowest), and Indonesia (7th-lowest). The eighth to eleventh-lowest countries in mathematics were Morocco, North Macedonia, Qatar, and Saudi Arabia, respectively. These rankings highlight the persistent challenges many countries face in mathematics education, with the Philippines particularly struggling to meet international benchmarks.

In teaching mathematics, teachers faced several challenges in delivering mathematics instruction that impacted students' performance. Notably, many learners exhibited a fleeting interest in math, particularly those struggling with reading comprehension or lacking a solid foundation in basic mathematical operations. These issues have contributed significantly to the difficulties encountered in their learning process (Aslan & Bektaş, 2019; Yıldırım & Şimşek, 2008).

Many studies and reports already come up with various reasons for Low performance in mathematics. Among those are student-related factors such as interest, attitude towards mathematics, study habits in learning mathematics (Majali, 2020; Zakaria & Nordin, 2008) and teacher-related factors such as, personality traits, teaching skills, and instructional materials displayed by the teacher (Adediwura & Tayo, 2007; Shin & Shim, 2021).

A student needs to think and make decisions using appropriate strategies to solve mathematical problems. They added that students' success in achieving their goals encourage them to develop positive attitudes towards mathematics and other problem solving activities (Effandi and Normah, 2016).

Moreover, students' attitudes towards mathematics are very much related to their attitude towards problem solving in general. Researchers added that negative attitudes need to be overcome, so that later in life, students will not suffer from poor problem-solving skills. It is important to master problem solving skills as these skills are essential for dealing competently with everyday life.

However, students' interest in mathematics is believed to play a significant role in mathematics achievement and might be one of the factors that influence students in mathematics achievement.

Students' attitudes towards Mathematics, their self-efficacy, and their level of interest in the subject have a significant impact on their performance (Bandura, 1997). Additionally, cognitive abilities, prior knowledge, and learning styles are crucial determinants of how well a student can grasp mathematical concepts (Piaget, 1952).

Many researchers found out that, the attitude towards study of mathematics had the highest correlation with mathematics achievement. The study conducted by Zadoo and Rana (2016), came up with the finding that study habits and academic achievement are possibly correlated.

The quality of instruction, teacher qualifications, and teaching methods are pivotal in shaping students' understanding of Mathematics. Teachers who use interactive and student-centered teaching methods tend to have students with better performance in Mathematics (Hattie, 2009). Moreover, teachers' beliefs about their students' abilities can also influence how they deliver instruction and, consequently, how students perform (Dweck, 2006).

Therefore, the researchers wanted to determine whether in actual teaching, learners particularly Key Stage 2 learners (Grades 4, 5, and 6) practically learn mathematics, and how teachers help students to solve, motivate, interact with teaching materials, as well as the impact of interest, attitude and study habits to pupils learning mathematics.

Research Questions

This study aimed to determine the factors influencing the Mathematics Performance of Key Stage 2 pupils at Ambaguio Central School. Specifically, it sought to answer the following questions:

1. What is the profile of the respondents in terms of:
 - 1.1. age;
 - 1.2. sex;
 - 1.3. grade level;
 - 1.4. parents' highest educational attainment; and

- 1.5. parents' occupation?
2. What is the Mathematics Performance of the respondents based on their mathematics assessment results?
3. What are the factors influencing the Mathematics Performance of the Key Stage 2 pupils in terms of:
 - 2 Learner-related factors
 - 2.1 interest
 - 2.2 attitude of the respondents towards Mathematics
 - 2.3 study habits on learning Mathematics
 - 3 Teacher-related factors
 - 3.1 personality traits
 - 3.3 teaching skills
 - 3.3 instructional materials
- 4 Is there a significant difference in the Mathematics Performance of the respondents when grouped according to their profile?
- 5 Is there a significant relationship between the profile of the respondents and the factors influencing their Mathematics Performance?

Assumptions of the Study

The study assumes that the Mathematics Performance of Key Stage 2 pupils at Ambaguio Central School varies according to their individual and family profiles and may be influenced by both learner-related and teacher-related factors. Specifically, it is assumed that pupils' age, sex, grade level, parents' highest educational attainment, and parents' occupation may be associated with their mathematics performance. It is also assumed that pupils' interest in Mathematics, attitude toward the subject, and study habits, as well as teachers' personality traits, teaching skills, and use of instructional materials, may influence the pupils' Mathematics Performance.

Furthermore, the study assumes that differences in the Mathematics Performance of the respondents may exist when they are grouped according to their profile and that significant relationships may exist between the respondents' profile and the identified factors influencing their Mathematics Performance. The study also assumes that the respondents will provide truthful and accurate responses to the research instrument and that the mathematics assessment results appropriately reflect their level of performance in Mathematics.

Methodology

Conceptual Framework

The mathematics performance of the respondents serves as the dependent variable while the profile of the respondents and factors influencing the mathematics performance of the respondents serves as the independent variables. The variable such as age, sex, grade level, occupation and Highest Educational Attainment that will determine the factors influencing the mathematics performance of the Key Stage 2 learners (Ogunleye, 2011; Pritchard & McLellan, 2007).

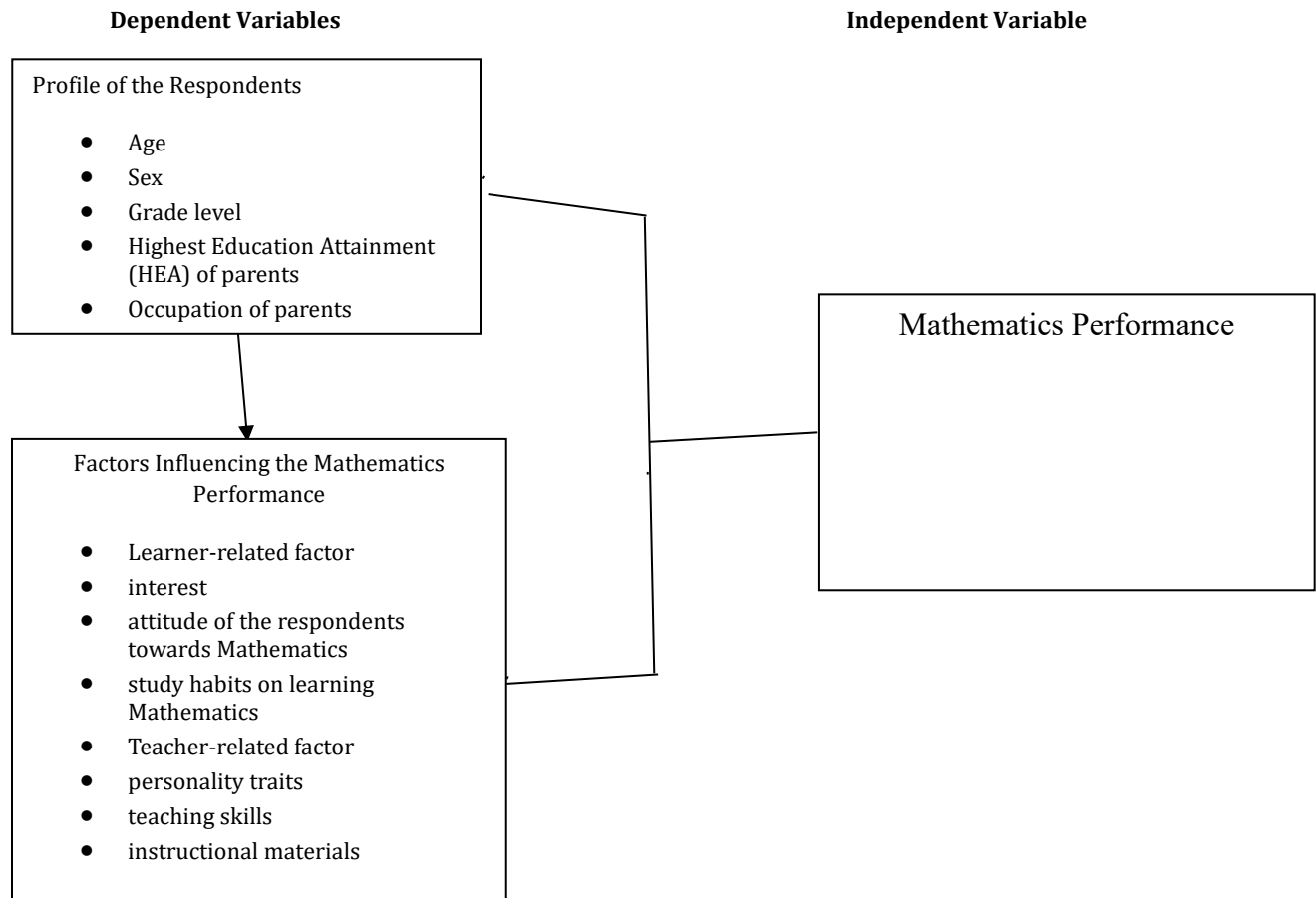


Figure 1. Conceptual paradigm of the study showing the relationship of the variable

Research Design

This study used descriptive inferential design of research. The descriptive method was used to describe the profile of the respondents and their Mathematics performance. Inferential research was used likewise to find out if there is a significant difference in the mathematics performance of respondents when grouped according to their profile. Also to find out if there is a relationship between the profile of the respondents and factors influencing the mathematics performance of the respondents.

Sample and Sampling Procedure

The respondents of the study are the key stage 2 learners of Ambaguio Central School.

The sample size was determined using the Slovin's formula. The population and sample size is as follows;

Grade level	Population(N)	Sample(n)	Percentage(%)
Grade 4	35	29	38.46%
Grade 5	32	26	35.16%
Grade 6	24	19	26.37%
Total	91	74	100%

Respondents of the Study

The respondents concentrated to the key stage 2 (Grades 4, 5, and 6) learners at Ambaguio Central School, Ambaguio, Nueva Vizcaya.

Time and Place of the Study

The study will be conducted at Ambaguio Central School for the school year 2024-2025.

Data Gathering Instrument

The researchers will utilize the researcher-made questionnaire. It consisted of two parts: Part 1 was on the profile of the respondents which includes their age, sex, grade level, occupation and highest educational attainment. Part 2 was on the factors influencing the mathematics performance.

The researchers used the Likert type 5-point rating scale: 1-never, 2-rarely, 3-sometimes, 4-often, 5-always.

Data Gathering Procedures

A letter will be forwarded to the principal requesting permission to gather data about the study upon approval. The questionnaire will be administered to the respondents with the assistance of the researchers, ensuring that respondents understand the questions and can provide accurate responses. To facilitate timely data collection, the researchers will retrieve the completed questionnaires immediately after they are filled out

Statistical Treatment of Data

Descriptive statistics such as frequencies and percentages will be used to analyze the profile of the respondents. Likewise means and standard deviations will be utilized to describe the mathematics performance of the key stage 2 learners. Further, simple inferential statistics using F-test and T-test will be used to determine if there is a significant difference in the factors influencing the mathematics performance of respondents when they are group according to their profile. Pearson correlation coefficient will be used to determine if there is a significant relationship between the factors influencing the mathematics performance of respondents and their profile variables.

To describe the performances of respondents in mathematics, the following mean ranges and qualitative description will be used:

Mean range	Qualitative Description
90-100	Outstanding
85-89	Very satisfactorily
80-84	Satisfactorily
75-79	Fairly satisfactorily
Below 75	Did not need expectations

Results and Discussion

This chapter presents the gathered, analyzed and interpreted data. Tables and figures are presented and their weight is tabulated. This includes the analysis and interpretation of the statistical results computed by the researchers.

This chapter also presents the results of the data gathering from respondent's assessment to identify the factors influencing the Mathematics Performance of Key Stage 2 pupils at Ambaguio Central School.

Profile of the Respondents

For the purpose of having an overview of the respondents' profile is quantified and presented in the tabular form to enable analysis and interpretation. The frequency and percentage distribution of the respondents' profile such as grade level, age, sex, highest educational attainment of parents (mother and father) and occupation of parents (mother and father) are summarized in the tables below.

Grade Level	Frequency	Percentage	Rank
Grade 4	29	39.19	1
Grade 5	26	35.14	2
Grade 6	19	25.68	3
Total	74	74.00	

Table 1.1 Grade Level

The table 1.1 above shows the profile of the respondents in terms of grade level. Out of 74 respondents, mostly of respondents were grade 4 students based on the highest frequency of 29 corresponding to 39.19% followed by grade 5 students with a frequency of 26 corresponding to 35.14%. The least frequency of 19 corresponding to 25.68% fell under grade 6 students. Overall results implies that mostly of respondents were grade 4 students.

Age	Frequency	Percentage	Rank
8 years old	1	1.35	5
9 years old	25	33.78	1
10 years old	23	31.08	2
11 years old	21	28.38	3
12 years old	4	5.41	4
Total	74	74.00	

Table 1.2 Age

The table 1.2 above shows the profile of the respondents in terms of age. Out of 74 respondents, mostly of respondents were 9 years old based on the highest frequency of 25 corresponding to 33.78% followed by 10 years old with a frequency of 23 corresponding to 31.08%. The least frequency of 1 corresponding to 1.35% fell under 8 years old. Overall results implies that mostly of respondents were 9 years old.

Sex	Frequency	Percentage	Rank
Male	40	54.05	1
Female	34	45.95	2
Total	74	74.00	

Table 1.3 Sex

The table 1.3 above shows the profile of the respondents in terms of sex. Out of 74 respondents, majority of the respondents were male with the frequency of 40 corresponding to 54.05% while the least frequency of 34 corresponding 45.95% fell under female. Overall results implies that majority of the respondents were male.

Highest Educational Attainment of Father	Frequency	Percentage	Rank
Elementary Level	9	12.16	5.5
Elementary Graduate	9	12.16	5.5
High School Level	15	20.27	2
High School Graduate	18	24.32	1
College Level	11	14.86	4
College Graduate	12	16.22	3
Total	74	74.00	

Table 1.4a Highest Educational Attainment of Father

The table 1.4a above shows the profile of the respondents in terms of highest educational attainment of father. Out of 74 respondents, mostly of respondents were high school graduate based on the highest frequency of 18 corresponding to 24.32% followed by high school level with a frequency of 15 corresponding to 20.27%. The least frequency of 9 corresponding to 12.16% fell under elementary level and elementary graduate. Overall results implies that mostly of the highest educational attainment of father were high school graduate.

Highest Educational Attainment of Mother	Frequency	Percentage	Rank
Elementary Level	4	5.41	6
Elementary Graduate	5	6.76	5
High School Level	17	22.97	2
High School Graduate	13	17.57	4
College Level	14	18.92	3
College Graduate	21	28.38	1
Total	74	74.00	

Table 1.4b Highest Educational Attainment of Mother

The table 1.4b above shows the profile of the respondents in terms of highest educational attainment of mother. Out of 74 respondents, mostly of respondents were college graduate based on the highest frequency of 21 corresponding to 28.38% followed by high school level with a frequency of 17 corresponding to 22.97%. The least frequency of 4 corresponding to 5.41% fell under elementary level. Overall results implies that mostly of the highest educational attainment of mother were college graduate.

Occupation of Father	Frequency	Percentage	Rank
Farming	51	68.92	1
Government Employee	8	10.81	2
Driving	4	5.41	4
Mechanic	3	4.05	5
Carpentry	1	1.35	6.5
Security Guard	1	1.35	6.5
BRGY. Employee	6	8.11	3
Total	74	74.00	

Table 1.5a Occupation of Father

The table 1.5a above shows the profile of the respondents in terms of occupation of father. Out of 74 respondents, majority of respondents occupation were in farming based on the highest frequency of 51 corresponding to 68.92% followed by government employee with a frequency of 8 corresponding to 10.81%. The least frequency of 1 corresponding to 1.35% fell under carpentry and security guard. Overall results implies that majority of the occupation of father were in farming.

Occupation of Mother	Frequency	Percentage	Rank
Farming	52	70.27	1
Government Employee	17	22.97	2
Saleslady	2	2.70	3.5
OFW	1	1.35	5
Housewife	2	2.70	3.5
Total	74	74.00	

Table 1.5b Occupation of Mother

The table 1.5b above shows the profile of the respondents in terms of occupation of mother. Out of 74 respondents, majority of respondents occupation were in farming based on the highest frequency of 52 corresponding to 70.27% followed by government employee with a frequency of 17 corresponding to 22.97%.

Moreover, Saleslady and housewife has the same frequency of 2 corresponding to 2.70% while the least frequency of 1 corresponding to 1.35% fell under OFW. Overall results implies that majority of the occupation of mother were in farming.

Mathematics Performance of the Respondents

For the purpose of having an overview of the mathematics performance of the respondents is quantified and presented in the tabular form to enable analysis and interpretation. The frequency and percentage distribution of the mathematics performance of the respondents is summarized in the table below.

Performance	Frequency	Percentage	Rank
Outstanding	11	14.86	4
Very satisfactorily	14	18.92	3
Satisfactorily	23	31.08	2
Fairly satisfactorily	26	35.14	1
Total	74	74.00	

Table 2. Mathematics Performance of the Respondents

The table 2. above shows the mathematics performance of the respondents. Out of 74 respondents, mostly of respondents has fairly satisfactorily mathematics performance based on the highest frequency of 26 corresponding to 35.14% followed by satisfactorily mathematics performance with a frequency of 23 corresponding to 31.08%. The least frequency of 11 corresponding to 14.86% fell under outstanding mathematics performance. Overall results implies that mostly of respondents has fairly satisfactorily mathematics performance.

Factors Influencing the Mathematics performance of the Key Stage 2 Pupils

This area of study presents the factors influencing the mathematics performance of the key stage 2 pupils in terms of learner-related factor: interest, attitude of the respondents towards mathematics, study habits in learning mathematics and teacher-related factor: personality trait, teaching skills, instructional materials. The data presented statistically treated through the use of weighted mean and standard deviation. The gathered data are shown on the tables below.

Table 2.1a below shows the factors influencing the mathematics performance of the key stage 2 pupils in terms of learner-related factor: interest which resulted to an overall mean of 3.92 interpreted as often experienced. The highlighted highest mean of 4.57, interpreted as always experienced, was statement number 1 *"I make myself prepared for the math subject"* followed by statement number 2 *"I listen attentively to the lecture of my math teacher"* having a mean of 4.42 also interpreted as always experienced.

Learner-Related Factor: Interest	WM	SD	Interpretation	Rank
1. I make myself prepared for the math subject.	4.57	0.81	Always	1
2. I listen attentively to the lecture of my math teacher.	4.42	0.86	Always	2
3. I actively participate on classes' discussion and answering activities and/or clarifying things I did not understand.	3.74	1.34	Often	4
4. I wanted to get good grades in test, quizzes, written works, and performance.	4.36	1.13	Always	3
5. I get frustrated when the discussions if interrupted of the teacher is absent.	2.49	1.51	Rarely	5
Overall Weighted Mean	3.92	0.61	Often	

Legend: 5.00 – 4.21 Always 4.20 – 3.41 Often 3.40 – 2.61 Sometimes 2.60 – 1.81 Rarely 1.80 – 1.00 Never

Table 2.1a Learner-Related Factor: Interest

The least mean of 2.49 interpreted as rarely response fell under statement number 5 *"I get frustrated when the discussions if interrupted of the teacher is absent"*. Overall results suggest that the respondents often experienced the factors influencing the mathematics performance of the key stage 2 pupils in terms of learner-related factor: interest.

Table 2.1b below shows the factors influencing the mathematics performance of the key stage 2 pupils in terms of learner-related factor: attitude of the respondents towards mathematics which resulted to an overall mean of 3.78 interpreted as often experienced. The highlighted highest mean of 4.43, interpreted as always experienced, was

statement number 5 “*I am interested to acquire further knowledge in mathematics*” followed by statement number 2 “*I find mathematics useful for problems of everyday life*” having a mean of 4.31 also interpreted as always experienced.

Learner-Related Factor: Attitude of the respondents towards Mathematics		WM	SD	Interpretation	Rank
1.	In school I thoroughly enjoy mathematics classes.	4.09	1.37	Often	4
2.	When I work with mathematics problems, I find that my thinking and reasoning are sharpened.	4.04	1.03	Often	6.5
3.	I feel uncomfortable with numbers and symbols.	2.97	1.44	Sometimes	8
4.	I am nervous to think in my mathematics class.	2.82	1.56	Sometimes	9
5.	I am interested to acquire further knowledge in mathematics.	4.43	0.94	Always	1
6.	I always need someone to help me with mathematics because it confuses me.	4.04	1.12	Often	6.5
7.	I am unable to think clearly when working with mathematics.	2.70	1.31	Sometimes	10
8.	Mathematics is a subject which I have always enjoyed studying.	4.07	1.26	Often	5
9.	I find mathematics useful for problems of everyday life.	4.31	1.13	Always	2
10.	I am sure I can learn the skill taught in mathematics class well.	4.27	1.05	Always	3
Overall Weighted Mean		3.78	0.51	Often	

Legend: 5.00 – 4.21 Always 4.20 – 3.41 Often 3.40 – 2.61 Sometimes 2.60 – 1.81 Rarely 1.80 – 1.00 Never

Table 2.1b Learner-Related Factor: Attitude of the respondents towards Mathematics

The least mean of 2.70 interpreted as sometimes response fell under statement number 7 “*I am unable to think clearly when working with mathematics*”. Overall results suggest that the respondents often experienced the factors influencing the mathematics performance of the key stage 2 pupils in terms of learner-related factor: attitude of the respondents towards mathematics.

Learner-Related Factor: Study Habits in Learning Mathematics		WM	SD	Interpretation	Rank
1.	I do my assignment regularly.	4.27	1.15	Always	1
2.	I exert more effort when I do difficult assignments.	4.19	1.08	Often	3.5
3.	I spend my vacant time in doing my assignments or studying the lessons.	3.35	1.60	Sometimes	9
4.	I study the lessons I missed if I was absent from the class.	2.85	1.64	Sometimes	10
5.	I study and prepare for quizzes and tests.	4.09	1.27	Often	5
6.	I study harder to improve my performance when I get low grades.	4.19	1.19	Often	3.5
7.	I spend less time with my friends during school days to concentrate more on my studies.	3.95	1.37	Often	6
8.	I prefer finish my studying and my assignments before watching any television program.	4.22	1.11	Always	2
9.	I see to it that extracurricular activities do not hamper my studies.	3.51	1.24	Often	8
10.	I have specific place of study at home which I keep clean and orderly.	3.91	1.38	Often	7

Overall Weighted Mean	3.85	0.77	Often
------------------------------	-------------	-------------	--------------

Legend: 5.00 – 4.21 Always 4.20 – 3.41 Often 3.40 – 2.61 Sometimes 2.60 – 1.81 Rarely 1.80 – 1.00 Never

Table 2.1c Learner-Related Factor: Study Habits in Learning Mathematics

Table 2.1c below shows the factors influencing the mathematics performance of the key stage 2 pupils in terms of learner-related factor: study habits in learning mathematics which resulted to an overall mean of 3.85 interpreted as often experienced. The highlighted highest mean of 4.27, interpreted as always experienced, was statement number 1 “*I do my assignment regularly*” followed by statement number 8 “*I prefer finish my studying and my assignments before watching any television program*” having a mean of 4.22 also interpreted as always experienced.

The least mean of 2.85 interpreted as sometimes response fell under statement number 4 “*I study the lessons I messed if I was absent from the class*”. Overall results suggest that the respondents often experienced the factors influencing the mathematics performance of the key stage 2 pupils in terms of learner-related factor: study habits in learning mathematics.

Teacher-related Factor: Personality Trait	WM	SD	Interpretation	Rank
<i>My mathematics teacher ...</i>				
1. has a good relationship to learners and teachers.	4.39	1.12	Always	2
2. shows smartness, confidence and fairness in making decisions.	4.47	0.91	Always	1
3. imposes proper discipline and is not lenient in following the prescribed rules.	4.12	1.29	Often	4
4. has an appealing personality with good sense of humor.	3.92	1.30	Often	5
5. is open to suggestions and opinions and is worthy of praise.	4.34	1.11	Always	3
Overall Weighted Mean	4.25	0.72	Always	

Legend: 5.00 – 4.21 Always 4.20 – 3.41 Often 3.40 – 2.61 Sometimes 2.60 – 1.81 Rarely 1.80 – 1.00 Never

Table 2.2a Teacher-related Factor: Personality Trait

Table 2.2a below shows the factors influencing the mathematics performance of the key stage 2 pupils in terms of teacher-related factor: personality trait which resulted to an overall mean of 4.25 interpreted as always experienced. The highlighted highest mean of 4.47, interpreted as always experienced, was statement number 2 “*My mathematics teacher shows smartness, confidence and fairness in making decisions*” followed by statement number 1 “*My mathematics teacher has a good relationship to learners and teachers*” having a mean of 4.39 also interpreted as always experienced.

The least mean of 3.92 interpreted as often response fell under statement number 4 “*My mathematics teacher has an appealing personality with good sense of humor*”. Overall results suggest that the respondents always experienced the factors influencing the mathematics performance of the key stage 2 pupils in terms of teacher-related factor: personality trait.

Teacher-related Factor: Teaching Skills	WM	SD	Interpretation	Rank
<i>My mathematics teacher ...</i>				
1. explains the objectives of the lesson clearly at the start of the lesson.	4.53	0.97	Always	1
2. has the mastery of the subject matter.	4.34	1.08	Always	2
3. is organized in presenting the subject matter following the order of competencies.	4.27	1.31	Always	3.5
4. makes the lessons contextualized relevant to the subject matter.	4.15	1.15	Often	5
5. uses various strategies, teaching aids/ devices and techniques in presenting the lessons.	4.27	1.24	Always	3.5

Overall Weighted Mean	4.31	0.70	Always
Legend: 5.00 – 4.21 Always 4.20 – 3.41 Often 3.40 – 2.61 Sometimes 2.60 – 1.81 Rarely 1.80 – 1.00 Never			

Table 2.2b Teacher-related Factor: Teaching Skills

Table 2.2b below shows the factors influencing the mathematics performance of the key stage 2 pupils in terms of teacher-related factor: teaching skills which resulted to an overall mean of 4.31 interpreted as always experienced. The highlighted highest mean of 4.53, interpreted as always experienced, was statement number 1 “*My mathematics teacher explains the objectives of the lesson clearly at the start of the lesson*” followed by statement number 2 “*My mathematics teacher has the mastery of the subject matter*” having a mean of 4.34 also interpreted as always experienced.

The least mean of 4.15 interpreted as often response fell under statement number 4 “*My mathematics teacher makes the lessons contextualized relevant to the subject matter*”. Overall results suggest that the respondents always experienced the factors influencing the mathematics performance of the key stage 2 pupils in terms of teacher-related factor: teaching skills.

Teacher-related Factor: Instructional Materials	WM	SD	Interpretation	Rank
<i>My mathematics teacher uses ...</i>				
1. Chalks and blackboard in explaining the lessons.	4.69	0.72	Always	1
2. Workbook or textbooks	3.59	1.48	Often	5
3. PowerPoint presentations	4.42	0.97	Always	2
4. Flashcards and counters	3.81	1.31	Often	4
5. Mathematics materials, tools and equipment	4.30	1.16	Always	3
Overall Weighted Mean	4.16	0.56	Often	

Legend: 5.00 – 4.21 Always 4.20 – 3.41 Often 3.40 – 2.61 Sometimes 2.60 – 1.81 Rarely 1.80 – 1.00 Never

Table 2.2c Teacher-related Factor: Instructional Materials

Table 2.2c below shows the factors influencing the mathematics performance of the key stage 2 pupils in terms of teacher-related factor: instructional materials which resulted to an overall mean of 4.16 interpreted as often experienced. The highlighted highest mean of 4.69, interpreted as always experienced, was statement number 1 “*My mathematics teacher uses chalks and blackboard in explaining the lessons*” followed by statement number 3 “*My mathematics teacher uses PowerPoint presentations*” having a mean of 4.42 also interpreted as always experienced.

The least mean of 3.59 interpreted as often response fell under statement number 2 “*My mathematics teacher uses workbook or textbooks*”. Overall results suggest that the respondents often experienced the factors influencing the mathematics performance of the key stage 2 pupils in terms of teacher-related factor: instructional materials.

Comparison in the Mathematics Performance of the respondents when they grouped according to their Profile

This area of study presents the significant difference in the mathematics performance of the respondents when they grouped according to their profile.

The data presented statistically treated through the use of independent sample t test and one way analysis of variance (ANOVA). The gathered data are shown on the table below.

Table 3. below shows the significant difference in the mathematics performance of the respondents when they grouped according to their profile resulted to a F/t value of 1.172 - 7.346 with a p-value of 0.001 – 0.332.

Significant difference result was revealed in grade level, highest educational attainment of mother and occupation of mother profile of respondents based on the p-values < 0.05 level.

However, the remaining profile shows a not significant difference results based on the p-values > 0.05 level.

Profile of respondents			F/t value	p-value	Remarks
Grade Level			7.346	0.001	Significant
Age			2.017	0.102	Not significant
Sex			-1.984	0.051	Not significant
Highest Educational Attainment	Father		1.172	0.332	Not significant
			2.811	0.023	Significant
Occupation	Father		1.235	0.300	Not significant
			2.693	0.038	Significant

If $p - \text{value} > 0.05$ Level: Accept H_0 : Not Significant

Table 3. Significant Difference in the Mathematics Performance of the respondents when they grouped according to their Profile

Overall results implies that there is significant difference in the mathematics performance of the respondents when they grouped according to their grade level, highest educational attainment of mother and occupation of mother profile of respondents.

Relationship between the Profile of the respondents and the Factors Influencing the Mathematics Performance of the respondents

This area of study presents the significant relationship between the profile of the respondents and the factors influencing the mathematics performance of the respondents. The data presented statistically treated through the use of Pearson r correlation. The gathered data are shown on the table below.

Table 4. below shows the significant relationship between the profile of the respondents and the factors influencing the mathematics performance of the respondents resulted to an r value of 0.005 - 0.323 suggesting a negligible to low positive correlation strength with a p-value of 0.005 – 0.966. Significant relationship result was revealed in profile of respondents in terms of highest educational attainment of mother and occupation of mother and the factors influencing in terms of learner-related factor: study habit as correlated to the mathematics performance of respondents based on the p-values < 0.05 level.

CORRELATION			r value	p-value	Remarks
Dependent	Independent				
Mathematics Performance	Profile	Grade Level	0.005	0.966	Not significant
		Age	-0.120	0.309	Not significant
		Sex	0.228	0.051	Not significant
		Highest Educational Attainment of Father	0.126	0.285	Not significant
		Highest Educational Attainment of Mother	0.277	0.017	Significant
		Occupation of Father	0.215	0.066	Not significant
		Occupation of Mother	0.238	0.041	Significant
	Factor	Learner-related Factor: Interest	0.220	0.059	Not significant
		Learner-related Factor: Attitude towards Subject	0.191	0.104	Not significant
		Learner-related Factor: Study Habit	0.323	0.005	Significant

Teacher-related Factor: Factor Personality Trait	0.191	0.102	<i>Not significant</i>
Teacher-related Factor: Teaching Skills	0.079	0.505	<i>Not significant</i>
Teacher-related Factor: Instructional Materials	-0.092	0.434	<i>Not significant</i>

If p – value > 0.05 Level: Accept H_0 : Not Significant

Table 4. Significant Relationship between the Profile of the respondents and the Factors Influencing the Mathematics Performance of the respondents

However, the remaining correlations shows a not significant relationships results based on the p-values > 0.05 level. Overall results implies that there is significant relationship between the profile of the respondents in terms of highest educational attainment of mother and occupation of mother and the factors influencing in terms of learner-related factor: study habit the mathematics performance of the respondents.

Conclusion and Recommendations

In the light of the above-mentioned review of findings, the following conclusions were drawn:

1. Findings revealed and concluded that mostly of respondents were the grade 4 students, aging 9 years old, male with highest educational attainment of father of high school graduate and in mother were college graduate with an occupation of father and mother both in farming.
2. The respondents have fairly satisfactorily mathematics performance.
3. The respondents often experienced the factors influencing the mathematics performance of the key stage 2 pupils in terms of learner-related factor: interest, attitude of the respondents towards mathematics and study habits in learning mathematics.
4. The respondents always experienced the factors influencing the mathematics performance of the key stage 2 pupils in terms of teacher-related factor: personality trait, teaching skills and instructional materials.
5. There is significant difference in the mathematics performance of the respondents when they grouped according to their grade level, highest educational attainment of mother and occupation of mother profile of respondents.
6. There is significant relationship between the profile of the respondents in terms of highest educational attainment of mother and occupation of mother and the factors influencing in terms of learner-related factor: study habit the mathematics performance of the respondents.

Acknowledgement

The authors would like to thank the colleagues and institutions who provided guidance, feedback, and support throughout the conduct of this research and the preparation of this manuscript. Any remaining errors or omissions are the sole responsibility of the authors.

Funding

This research received no external funding from any public, commercial, or not-for-profit funding agency, and no organization provided financial support for the conduct of the study, authorship, or publication of this article.

Competing Interests Statement

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this article.

Data Availability Statement

Data sharing is not applicable to this article as no new data were created or analyzed in this study; all data used were obtained from previously published sources as cited in the reference list.

References

- Adediwura, A. A., & Tayo, B. (2007). Perception of teachers' knowledge, attitude and teaching skills as predictor of academic performance in Nigerian secondary schools. *Educational Research and Reviews*, 2(7), 165–171. <https://doi.org/10.5897/ERR.9000163>
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. W. H. Freeman and Company.
- Bernardo, A. B. I., Cordel, M. O., II, Lapinid, M. R. C., Teves, J. M. M., Yap, S. A., & Chua, U. C. (2022). Contrasting profiles of low-performing mathematics students in public and private schools in the Philippines: Insights from machine learning. *Journal of Intelligence*, 10(3), Article 61. <https://doi.org/10.3390/jintelligence10030061>
- Boaler, J. (2008). *What's math got to do with it? How teachers and parents can transform mathematics learning and inspire success*. Viking.
- Department of Education. (2019, December 3). *Sulong EduKalidad: DepEd's battlecry moving forward*. <https://www.deped.gov.ph/2019/12/03/sulong-edukalidad-depeds-battlecry-moving-forward/>
- Dewey, J. (1952). *Experience and education*. Macmillan.
- Dweck, C. S. (2006). *Mindset: The new psychology of success*. Random House.
- Hattie, J. (2009). *Visible learning: A synthesis of over 800 meta-analyses relating to achievement*. Routledge.
- Hogg, M. A., & Vaughan, G. M. (2005). *Social psychology* (4th ed.). Pearson Education.
- Kizlik, B. (2012). *How to study and learn (Part one): Becoming an effective student*. ADPRIMA.
- Locke, J. (1689). *An essay concerning human understanding*. Thomas Bassett.
- National Council of Teachers of Mathematics. (2000). *Principles and standards for school mathematics*. Author.
- OECD. (2023). *PISA 2022 results (Volume I and II): Country notes—Philippines*. OECD Publishing. https://www.oecd.org/en/publications/pisa-2022-results-volume-i-and-ii-country-notes_ed6fbcc5-en/philippines_a0882a2d-en.html
- Piaget, J. (1952). *The origins of intelligence in children* (M. Cook, Trans.; 2nd ed.). International Universities Press.
- Runisah, R., Herman, T., & Dahlan, J. A. (2017). Using the 5E learning cycle with metacognitive technique to enhance students' mathematical critical thinking skills. *International Journal on Emerging Mathematics Education*, 1(1), 87–98. <https://doi.org/10.12928/ijeme.v1i1.5698>
- Shin, D., & Shim, J. (2021). Students' perceived mathematics teacher competence: Longitudinal associations with learning outcomes and choice of college major. *Education Sciences*, 11(1), Article 18. <https://doi.org/10.3390/educsci11010018>
- Tarcov, N. (1989). *Locke's education for liberty*. University of Chicago Press.
- Yıldırım, A., & Şimşek, H. (2008). *Sosyal bilimlerde nitel araştırma yöntemleri* [Qualitative research methods in the social sciences] (7th ed.). Seçkin Yayıncılık.
- Zakaria, E., & Yusoff, N. (2009). Attitudes and problem-solving skills in algebra among Malaysian matriculation college students. *European Journal of Social Sciences*, 8(2), 232–235.

Appendices

No appendices are attached to this study.