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# Factors Affecting BSED-Mathematics Students' Learning Achievement in Mathematics at Ifugao State University-Potia Campus

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Abstract

Mathematics as a subject affects all aspects of human life at different levels for this is seen by the society as the foundation of scientific technological knowledge that is vital in social-economic development of a nation. This study aims to examine the factors affecting the academic performance in Mathematics of students taking up Bachelor of Secondary Education (BSED) in Mathematics at Ifugao State University-Potia Campus. The researchers used descriptive correlational research design to determine the relationship between the learning factors and academic achievement of students in BSED Mathematics. A total enumeration sampling was employed among the 40 Bachelor of Secondary Education major in Mathematics students. To generate the necessary data, a standardized collection procedure was done using a 5-point Likert-type survey questionnaire. The findings show that student-related factors (interest and study habits) and environmental-related factors have a significant relationship with the academic achievement of students while teacher-related factors (personality traits and teaching skills) and parent-related factors show no significant relationship with the academic achievement of students in Mathematics. The researchers recommend that students should learn to balance and manage their time in attending to their requirements. Teachers as well are encouraged to apply strategies and interventions in teaching, such as game-based activities, to enhance students' quality of learning.

Keywords: learning factors; academic achievement; Mathematics; higher education; BSED students; correlation



## INTRODUCTION

Education is significantly one of the most critical factors in producing an efficient human resource that is necessary in the development of a nation. Education, in a broad sense, is any activity that has a significant effect on developing the cognitive, affective and psychomotor domains of any individual. It is composed of various disciplines, which should be taught and learned by every human. One of the most established disciplines, and also a part of every curriculum around the world, is Mathematics (Almerino et al., 2020).

Mathematics as a subject affects all aspects of human life at different levels. Mathematics is seen by society as the foundation of scientific technological knowledge that is vital in social-economic development of a nation (Enu, et al., 2015; Siregar and Dewi, 2022). Furthermore, Gulo et al. (2024) stated that mathematics problems are difficult. "I did not know how to do it. That's why I did not finish it. I don't like Maths". These statements are quite familiarly heard when students are inquired about their homework. They seem to be struggling with their homework especially on Mathematics.

In Asia, Mathematics is viewed as one of the most critical subjects wherein students are encouraged to study the discipline (Leatham & Peterson, 2010; Ronis, 2008, Lim et al., 2023). It is in this view that in most Asian countries, guiding practices on children's Mathematics achievements are quite more vigorous (Bokhove, 2022).

Different forms of memory, such as visuospatial short-term memory, visuospatial working memory, and verbal short-term memory, play a crucial role in students' Mathematics

achievement. (Coolen & Castronovo, 2023). Previous researches identified many reasons for students' difficulties in learning mathematics. There are cognitive, affective and environmental factors contributing to differences in students' learning of mathematics. Educational psychologists had studied the relation of mathematics learning with certain cognitive factors where numerical cognition processes predict later performance in Mathematics and reading, affecting intelligence, working memory and processing speed (Fuchs et al., 2021).

In addition, Ogondiek and Ndamage (2025) found that school related factors such as low teacher commitment, poor habits, and inadequate materials by both teachers and students are some major factors contributing to poor performance in mathematics education. Parental involvement and help from other family members have shown significant improvement in students' achievement.

Lack of many Mathematical skills caused difficulties in solving problem. Students are required to apply and integrate many mathematical concepts and skills during the process of making decision and problem-solving. Ihsan et al. (2024) stated that deficiency in visual-spatial skill might cause difficulty in differentiating, relating and organizing information meaningfully.

Incomplete mastery of number facts, weakness in computation, inability to connect conceptual aspects of math, inefficiency to transfer knowledge, difficulty to make meaningful connection among information, incompetency to transform information mathematically, incomplete mastery of mathematical terms, incomplete understanding of mathematical language and difficulty in comprehend and visualizing mathematical concept might result in difficulties (Ayu & Wanabuliandari, 2021).

Almerino et al. (2020) stated that in the Philippines, Mathematics is a general education subject in primary and higher education where learners are expected to gain understanding and appreciation of its principles as an applied-using appropriate technology in problem-solving, critical thinking, communicating, reasoning, making connections, representations, and decisions in real life (K to 12 Basic Education Curriculum). Additionally, in the Philippine context, educational modules are structured with clearly defined topics and instructional standards aimed at developing students' logical reasoning and numerical skills essential for understanding fundamental mathematical concepts. Nevertheless, low achievement in the discipline remains a persistent concern.

As mentioned Callaman and Itaas (2020), the Philippines ranked 2nd from the bottom among the participating countries in the recent Programme for International Student Assessment (PISA) 2018 according to DepEd - National Report of the Philippines (2019). This alarming result revealed that Filipino students recorded a mean score of 353 points in Mathematics Literacy which is significantly lower than the OECD mean of 489 points. It is also reported that only 1 out of 5 Filipino students or approximately 19.7% attained at least the minimum proficiency level (Level 2) in Mathematics Literacy.

Analyzing the state of our country in the learning of Mathematics, this study therefore aims to determine the factors that influence the academic achievement of students in Mathematics. It also assessed the significant relationship between the academic performance of students in Mathematics and the factors that influence their academic performance. Based on the results, the study proposed some strategies to boost student's academic performance and improve their learning in Mathematics.

Statement of the Problem. This study aims to determine the factors that influence the academic achievement of BSED-Mathematics students in Ifugao State University-Potia Campus. Specifically, this study seeks to answer the following questions:

1. What is the academic performance of the students in mathematics?

2. What are the elements that influence the academic performance of the students?

3. What is the significant relationship of the academic performance of students in mathematics and the elements that influence the academic performance of the students?

4. What strategies should be proposed to address students' learning difficulties in mathematics?

Significance of the Study. This study will greatly benefit the Commission on Higher Education (CHED), teachers, students, parents, the researchers and future researchers. With the help of this study, CHED could gain information about the Mathematics achievement and learning factors in Mathematics from students from Ifugao State University-Potia Campus which will be of great contribution for them to craft better policies that may help in the learning and teaching process.

Teachers will also identify the weaknesses and strengths of their present students in Mathematics and use them as basis in improving their strategies and techniques in teaching the subject. Students, on the other hand, could lead to a greater understanding about the Mathematics subject which in turn can improve their Mathematics academic performance. The researchers of this study will be able to report the results of the study thus sharing their knowledge. Furthermore, it could broaden their perceptions on how to improve Mathematics performance of students. And for future researchers, it will serve as a guide or basis for their future studies that delves on Mathematics achievement.

## LITERATURES

Mathematics is widely acknowledged as a challenging subject for many students and even renowned thinkers like Albert Einstein recognized the inherent difficulties involved in understanding mathematical concepts. Furthermore, this challenge extends to educators, who often struggle to find effective teaching strategies that go beyond traditional rote memorization. Thus, the conventional lecture approach, emphasizing memorizing mathematical facts, has gradually been replaced by innovative methods aimed at fostering not only mastery but also deep comprehension of students (Reiss et al., 2020).

Additionally, learning difficulties in mathematics can be viewed within a broader context of academic challenges. Lenhard (2020) describes learning difficulties as an umbrella term encircling a variety of academic problems halting from different origins. These include general learning deficits and low academic performance as well as specific disorders such as those affecting reading, spelling, and arithmetic. Knowing these varied challenges is essential for developing effective instructional methods tailored to students' needs.

This study is grounded in the experiential learning theory, which emphasizes learning through direct experience. According to Western Governors University (2020), experiential learning is based on the principle that active engagement in learning activities enhances retention and understanding. Thus, experiential learning theory is supported with the Kolb's experiential learning model which outlines a four-stage cycle: concrete experience, reflective observation, abstract conceptualization, and active experimentation. The initial stages involve grasping new experiences, while the latter stages focus on transforming and applying those experiences. Kolb argues that learners benefit most when they continuously cycle through these stages, entering at any point depending on their individual learning process.

Empirical evidence supports the effectiveness of experiential learning in improving student motivation and engagement (Kong, 2021). Weinberg, Basile, and Albright (2011) found that students exposed to experiential instruction exhibited increased motivation, a more positive attitude toward their courses, and greater interest in their future careers. These outcomes underscore the value of incorporating experiential strategies in education, including Mathematics.

Specifically, in the context of mathematics education, Murwani et al. (2020) emphasize the importance of experiential learning for developing students' conceptual understanding and problem-solving skills. Through actively engaging in mathematical practices, students learn to identify problems, construct logical arguments, and apply mathematical reasoning to real-life situations. This approach not only enhances comprehension but also encourages critical thinking and practical application, which are crucial for mastery in Mathematics.

## METHODOLOGY

Research Design. This study used quantitative descriptive correlational research design to determine the relationship between the learning factors and academic achievement of BSED Mathematics students.

Population and Setting. The study was conducted at Ifugao State University-Potia Campus Alfonso Lista, Ifugao, Philippines. A complete enumeration of 40 Bachelor of Secondary Education (BSED) students major in Mathematics, and enrolled during the school year 2021-2022, was employed as respondents of the study.

Research Instrument. The study utilized an online survey questionnaire to gather the relevant data. The instrument was composed of 29-item questions using a 5-point Likert scale with the following descriptions: 5-always, 4-often, 3-sometimes, 2- rarely and 1- never. This was a modifies version of the adopted questionnaire from the research of Balbalosa (2010) on factors affecting Mathematics performance at the Laboratory School of Laguna State Polytechnic University, school year 2009-2010.

To analyze the mean response of the respondents, the succeeding interpretations were used (Table 1).

Table 1
*5-point Likert Scale with Verbal Description*

| Quantitative Description | Qualitative Description |
|---|---|
| 1.00-1.80 | Never |
| 1.81-2.60 | Rarely |
| 2.61-3.40 | Sometimes |
| 3.41-4.20 | Often |
| 4.21-5.00 | Always |

Data Source. The academic performance of the students, graded by percentage point system at the end of each term, was outsourced to from the Registrar to represent the performance of the students in Mathematics. Table 1 below indicates the grade range with the following descriptive equivalents.

Table 2
*Level of Academic Performance*

| Descriptive Equivalent | Grades |
|---|---|
| Outstanding/Superior | 95-100 |
| Above Average | 89-94 |
| Fair | 80-88 |
| Failed | 70-74 |

Data Gathering Procedure. Initially, the researchers made a letter of request to conduct the study. They also explained to the respondents the importance of their presence when answering the said questionnaire. The researchers clarified some terms to the respondents for them to answer the survey questionnaires with full knowledge and within the context of the study. Hence, they also requested for the full honesty of the respondents as they answer the online questionnaires.

Statistical Treatment. To describe the academic performance and factors that influence the academic performance of the students, the data were analyzed using frequency count, percentage and weighted mean. On the other hand, to test the significant relationship between the academic performance of students in mathematics and the factors that influence the academic performance of the students, the researchers used correlational analysis. Furthermore, Package for Social Sciences (SPSS) was used to run all analysis.

## RESULTS AND DISCUSSION

Student's Academic Performance in Mathematics. Table 3 shows the academic performance of students in mathematics. It shows that among the 40 students, three (3) or 7.5% of them earned a 95-100 grade which describes their performance as an outstanding/superior, 31 or 77.5 % of them got a grade of 89-94 which means that most of them are in above average grade, five (5) or 12.5% obtained a grade of 80-88 which means that they are in average level, and one (1) or 2.5% got a grade of 75-79 which falls to fair. This implies that student's academic performance in mathematics mostly lies on the above average which means mathematics students are knowledgeable enough in their chosen course.

Table 3
*Student's Academic Performance in Mathematics*

| Descriptive Equivalent | Grades | Frequency | Percentage |
|---|---|---|---|
| Outstanding/Superior | 95-100 | 3 | 7.5 |
| Above Average | 89-94 | 31 | 77.5 |
| Average | 80-88 | 5 | 12.5 |
| Fair | 75-79 | 1 | 2.5 |
| **Total** | | **40** | **100** |

Factors Influencing the Academic Achievement of Students in Mathematics. The tables below present the result of the factors that influence the academic achievement of students in mathematics.

1. *Student-Related Factors in terms of Interest.* Table 4 presents student-related factors of interest that influence academic achievements in Mathematics. The highest-rated item was "I want to get good grades on tests, quizzes, assignments, and projects" with a mean of 4.50 interpreted as always, followed by "I listen attentively to the lecture of my math teacher" (4.15) and "I actively participate in discussions, answering exercises, and clarifying thing I did not understand" (3.95). Next is "I make myself prepared for my math subject" (3.80). Lastly, "I get frustrated when the discussion is interrupted or the teacher is absent" (3.33) which has the least mean score. The overall mean was 3.95, interpreted as often which indicates that students' interest in Mathematics significantly influences their academic performance. According to Jansen et al. (2016), academic interest enhances achievement by promoting effort and perseverance beyond cognitive ability. Renninger & Hidi (2016) also emphasize that interest fuels motivation, guiding both academic and career success. Similarly, Hidi and Lu et al. (2020) noted that interested students are more engaged and perform better academically.

Table 4
*Students Related Factors in terms of Interest*

| Indicators | Mean Score | Interpretation |
|---|---|---|
| I prepare myself for the math subject | 3.80 | Often |
| I listened attentively to the lecture of my math teacher | 4.15 | Often |
| I actively participate in discussion, answering exercises and/or clarifying things I did not understand | 3.95 | Often |
| I want to get good grades on tests, quizzes, assignments and projects | 4.50 | Always |
| I get frustrated when the discussion is interrupted or the teacher is absent | 3.33 | Sometimes |
| **Total** | **3.95** | **Often** |

2. *Student-Related Factors in terms of Study Habits.* Presented in Table 5 are the student-related factors in terms of study habits, with an overall mean score of 4.04, indicating that these habits often influence academic achievement. The highest mean score is for "I do my assignments regularly" (4.20), followed closely by "I study harder to improve my performance when I got low grades" (4.18) and "I study and prepare for quizzes and tests" (4.13). "I study the lessons I missed if I was absent from class" scored 4.00, while the lowest mean score was for "I see to it that extra-curricular activities do not hamper my studies" (3.68), still interpreted as often. This suggests students demonstrate determination to study hard and adopt effective habits that positively impact on their academic performance, particularly in Mathematics. This is supported by Kelli (2009) that for students to succeed in their studies, they must be able to appropriately assimilate course content, digest it, reflect on it and be able to articulate the information in written and/or oral form. In addition, Aurora (2016) also posits that in other words students with better academic

achievement use these skills more than those with lower academic achievement.

Table 5
*Student Related Factors in terms of Study Habits*

| Indicators | Mean Score | Interpretation |
|---|---|---|
| I see to it that extra-curricular activities do not hamper my studies | 3.68 | Often |
| I do my assignments regularly | 4.20 | Often |
| I study harder to improve my performance when I got low grades | 4.18 | Often |
| I study the lessons I missed if I was absent from the class | 4.00 | Often |
| I study and prepare for quizzes and test | 4.13 | Often |
| **Total** | **4.04** | **Often** |

3. *Teacher-Related Factors in terms of Personality Traits*. Reflected in Table 6 are the data on the teacher related factors in terms of the personality traits of the teachers in math. The mean rating as follows: shows smartness, confidence and firmness in making decisions (4.40); open to suggestions and opinions and is worthy of praise (4.30); has a good relationship with the students (4.20); and have an appealing personality with good sense (4.15). Personality Traits of math teacher has a total of 4.26 mean score and a total response of always. This implies that Personality Traits of mathematics teachers is a big factor that always has an influence on the academic achievement of students. Positive personality traits of mathematics teachers can help in a better performance of students in mathematics.

Table 6
*Teacher Related Factors in terms of Personality Traits*

| Indicators | Mean Score | Interpretation |
|---|---|---|
| Has a good relationship with the students | 4.20 | Often |
| Shows smartness, confidence and firmness in making decisions | 4.40 | Always |
| Has an appealing personality with a good sense of humor | 4.15 | Often |
| Open to suggestions and opinions and is worthy of praise | 4.30 | Always |
| **Total** | **4.26** | **Always** |

4. *Teacher-Related Factors in terms of teaching Skills.* Table 7 highlights teacher-related factors in teaching skills with a total mean score of 4.31, interpreted as always influencing students' academic achievement in mathematics. The highest-rated skill is "uses various strategies, teaching aids/devices, and techniques" (4.38), followed by "explains lesson objectives clearly" (4.35) and "organized presentation following the course outline" (4.30). Mastery of subject matter (4.28) and being updated with current trends (4.25) also received strong ratings.When combined with findings on teacher personality traits (mean 4.26, always) and student study habits (mean 4.04, often), it's clear that teaching skills are the most influential factor in student success. Effective teaching methods, confidence, openness, and positive relationships create an environment where students are motivated and able to perform better in mathematics. The findings are aligned with the study of Seggie et al. (2020) that positive attitude of tutors regarding student's performance and teachers' high-quality methods can improve student's performance. Teachers' mood and behavior influence the student's success. Likewise, Warni and Fadhilah (2024) stated that teachers' personality has a direct influence on students' way of thinking, inspiration, attitudes and their academic achievement. Furthermore, study determines also that positive attitude of teachers regarding student performance, teacher's high-quality method, can improve student success (Ullah & Muhammad, 2024).

Table 7
*Teacher Related Factors in terms of Teaching Skills*

| Indicators | Mean Score | Interpretation |
|---|---|---|
| Explains the objectives of the lesson clearly at the start of each period | 4.35 | Always |
| Has mastery of the subject matter | 4.28 | Always |
| Organized in presenting subject matters by systematically following course outline | 4.30 | Always |
| Is updated with present trends, relevant to the subject matter | 4.25 | Always |
| Uses various strategies, teaching aids/devices and techniques in presenting the lessons | 4.38 | Always |
| **Total** | **4.31** | **Always** |

5. *Environmental-Related Factors in terms of the condition of the surrounding.* Table 8 presents environment-related factors affecting students' mathematics

achievement, with an overall mean score of 3.90 (often). The highest-rated factor is cleanliness in the learning environment (4.30, always), followed by electricity availability (4.18, often). Factors such as promoting silence (3.75, often), suitable ambiance (3.68, often), and internet access (3.60, often) received lower ratings, indicating areas needing improvement to better support student focus. When combined with findings from previous tables, it's clear that while students' study habits (mean 4.04, often) and teacher personality traits (mean 4.26, always) positively influence academic achievement, teaching skills stand out as the most crucial factor (mean 4.31, always). Effective teaching, supported by positive teacher traits and strong student habits, drives better performance in mathematics. It is supported by Erita et al. (2023) which he proposes that the learning environment dramatically affects the learning outcomes of students. Schools' open space and noise, inappropriate temperature, insufficient light, overcrowded classes and inappropriate classroom layout all make up factors that could be confounding variables distracting students in class. In addition, the social atmosphere of a school is a potential and important contributing factor to the student outcomes. Therefore, educational zone requires a serene atmosphere instead of any disturbances. School environment affects the teaching and learning process (Peñabaena-Niebles et al., 2023).

Table 8
*Environmental-Related Factors in terms of the condition of the surrounding*

| Indicators | Mean Score | Interpretation |
|---|---|---|
| Internet can be easily accessed in the learning environment | 3.60 | Always |
| The learning environment promotes silence to strengthen focus on the ongoing lesson. | 3.75 | Often |
| The ambiance of the learning environment suits to promote maximized learning experience | 3.68 | Often |
| Electricity is available in the learning environment | 4.18 | Often |
| Cleanliness is observed within the learning environment. | 4.30 | Always |
| **Total** | **3.90** | **Often** |

6. *Parent-Related Factors in terms of Support.* Table 9 shows parent-related support factors with an overall mean score of 4.11 (often), highlighting their important role in students' mathematics achievement. The highest-rated item is parents providing adequate study needs (4.30, always), followed by acknowledging achievements (4.20) and understanding busy school schedules (4.18). Parents exerting extra effort (4.00) and encouraging activities (3.85) were rated often. When combined with earlier findings, it's clear that while students' study habits are important (mean 4.04, often), teacher teaching skills (4.31, always) and personality traits (4.26, always) have the strongest influence on academic success. Environmental factors (mean 3.90, often) also affect learning, with cleanliness and electricity availability as strengths but room for improvement in promoting silence and internet access.

Table 9
*Parent-Related Factors in terms of Support*

| Indicators | Mean Score | Interpretation |
|---|---|---|
| My parents encourage me to do my activities | 3.85 | Often |
| My parents provide adequate needs in terms of my studies | 4.30 | Always |
| My parents give acknowledges my achievements in school | 4.2 | Often |
| My parents exert extra efforts to improve my quality of learning | 4.00 | Often |
| My parents understand when I'm too busy on doing some school matters | 4.18 | Often |
| **Total** | **4.11** | **Often** |

Shahzad, et al (2020) stated that supportive attitude of parents is found to be positively associated with the academic performance of students. Students who came from the families where parents were more supportive towards education, perform academically well as compared to those students whose parents didn't show any involvement. In addition, children who worked with their parents at home on math assignment achieved better math grades. It demonstrated that when parents are involved in a child's schooling by assisting them with homework, communicating with

teachers and attending all events at school, it helps the child to do very well in the all the subjects the school (Peng et al., 2020).

Summary on the Level of the Elements that Influence Academic Achievement. In Table 10, the study reveals that students' academic achievement in mathematics is strongly influenced by teacher-related factors, with teaching skills (4.31) and personality traits (4.26) rated as always impactful, while parental support (4.11), study habits (4.04), student interest (3.95), and environmental conditions (3.90) often contribute. Students demonstrate determination through regular assignments and studying harder after low grades, and parents provide essential support by meeting study needs and acknowledging achievements. The learning environment excels in cleanliness and electricity availability but needs improvement in promoting silence and internet access. Research supports that effective teaching, positive teacher attitudes, and parental involvement significantly enhance student performance, emphasizing that continuous enhancement of all these factors is vital for maximizing success in mathematics.

Table 10
*Summary on the Level of Influence of the Elements*

| Indicators | Mean Score | Description |
|---|---|---|
| Academic Performance | 3.90 | Above Average |
| Interest | 3.95 | Often |
| Study Habits | 4.04 | Often |
| Personality Traits | 4.26 | Always |
| Teaching Skills | 4.31 | Always |
| Environmental Condition | 3.90 | Often |
| Parent Support | 4.11 | Often |
| **Grand Mean** | **4.07** | **Often** |

The Relationship Between the Factors that Influence the Academic Achievement and the Academic Performance of Students. Presented in Table 11 are the results of the correlational analysis for the relationship between the academic performance and the factors influencing academic achievements. As shown, the overall computed r-value is 0.115 with an equivalent p-value of 0.252. Specifically, each domain of factors influencing students' achievement is tested for association with students' academic performance. The r-vales are as follows: Interest (r=-0.335,p=0.35) with p-value 0.35; Study habits (r=-0.346,p=0.029) with p-value 0.029; Personality Traits (r=-0.082,p=0.630)) with p-value .630; Teaching Skills (r=-0.431,p=0.387) with p-value.387; Environmental (r=-0.363,p=0.021)with p-value .021 and Parent's' support (r=-0.129,p=0.427)with p-value .427.

Table 11
*Correlation Analysis*

| Domain | Mean Score | Interpretation | Pearson Correlation with Academic Performance |
|---|---|---|---|
| Teaching Skills | 4.31 | Always | 0.141 (p=0.387, ns) |
| Personality Traits | 4.26 | Always | 0.082 (p=0.613, ns) |
| Parent Support | 4.11 | Often | 0.129 (p=0.427, ns) |
| Study Habits | 4.04 | Often | -0.346 (p=0.029)* |
| Interest | 3.95 | Often | -0.335 (p=0.035)* |
| Environmental Condition | 3.90 | Often | -0.363 (p=0.021)* |

**Significant at p < 0.05; ns = not significant*

The data shows that academic performance of students is significantly associated with the Student-Related factors, specifically Study Habits and Environmental-Related Factors namely Environmental Conditions. Additionally, Teacher –related factors (Personality traits and Teaching skills) and Parent–Related Factors (Parent's support) show high positive correlation towards academic performance of students.

Since the over-all computed p-value is greater than 0.05, the null hypothesis was retained and which could be stated, that there is no significant relationship between academic performance of students and the factors influencing academic achievement. However, student-related factors (study habits) and Environmental-Related factors (Environmental conditions) are significantly and positively associated with academic performances. These imply that students with higher interest, also have better the study habits and better environmental conditions. These findings are consistent with the study of Zhang and Wang (2020) which concluded that interest towards mathematics learning is considered as a predictor for mathematics achievement. Likewise, these results support the findings Khusaini et al. (2022) found that students' interest towards learning is one of the contributing factors in successful academic

performance. These results are also in accordance with the findings of Merano (2025) which suggested that good study habits help students to: attend classes very often and do so on time. It also helps them to submit their assignment on time, read or prepare very well for tests and exams, take down notes and develop the points independently, ask relevant questions in class; thereby having good grades at the end of the term or semester. Finally, these findings are consistent with the study of Hendrix (2019) which concluded that students who study in a positive learning environment have been observed to be more motivated, engaged, and has a higher overall learning ability. On the other hand, students learning in poor environments – those that are uncomfortable, loud, or full of distractions – will find it far more difficult to absorb information and stay engaged.

Conclusion and Recommendations. The study concludes that most students demonstrate above-average academic performance in mathematics, often influenced by factors such as teacher teaching skills and personality traits, parental support, student study habits, interest, and environmental conditions. Despite these influences, no significant relationship was found between these elements and academic performance, suggesting other variables may also play a role. To further improve outcomes, students should enhance their study habits, engage in collaborative learning, and maintain a balanced schedule, while benefiting from a comfortable and supportive learning environment. Teachers are encouraged to foster positive relationships with students, demonstrate mastery in their subject, and apply diverse teaching strategies to boost learning quality. Meanwhile, prioritizing improvements in student interest, study habits, and environmental conditions is crucial. Parents play a vital role by sustaining strong support systems that motivate their children. Together, these efforts can create an optimal environment that consistently promotes higher achievement in mathematics.

REFERENCES

Almerino, et al. (2020). *Mathematics Performance of Students in a Philippine State University.* https://www.researchgate.net/publication/340254879_Mathematics_Performanc_of_Students_in_a_Philippine_State_University

Balbalosa, J. (2010). *Questionnaire-Research made Questionnaire on Factors Affecting Mathematics Performance of Laboratory School of Laguna State Polytechnic University 2009-2010.* https://www.slideshare.net/jennilynbalbalosa/questionnaire-4083557

Bokhove, C. (2022). Are instructional practices different between East and West? An analysis of Grade 8 TIMSS 2019 data. *Asian Journal for Mathematics Education, 1*, 221-241. https://doi.org/10.1177/27527263221109752

Callaman, R., & Itaas, E. (2020). *Students' mathematics achievement in Mindanao context: A meta-analysis.* https://files.eric.ed.gov/fulltext/EJ1267489.pdf

Coolen, I., & Castronovo, J. (2023). How Memory Counts in Mathematical Development. *Journal of Cognition, 6.* https://doi.org/10.5334/joc.248

Enu, J., Agyman, S., Nkum, D. (2015). *Factors Influencing Students' Mathematics Performance In Some Selected Colleges of Education in Ghana.* https://www.researchgate.net/publication/333798075_Factors_influencing_Stud_ents'_Mathematics_Performance_in_some_selected_Colleges_of_Education_in_Gha_a

Erita, Y., Utami, V., Kurniawan, F., & Syahrir, D. (2023). The influence of students' environment on students' learning motivation. *JOURNAL OF DIGITAL*

*LEARNING AND DISTANCE EDUCATION.* https://doi.org/10.56778/jdlde.v1i8.58

Fuchs, L., Geary, D., Spencer, M., & Fuchs, D. (2021). Connections between Mathematics and Reading Development: Numerical Cognition Mediates Relations between Foundational Competencies and Later Academic Outcomes. Journal of Educational Psychology, 114(2), 273-288. https://doi.org/10.1037/edu0000670

Gulo, R., Zega, Y., Telaumbanua, Y., & Mendrofa, R. (2024). Analysis of Students Difficulties in Solving Junior High School Mathematics Problems. *EDUTEC: Journal of Education And Technology.* https://doi.org/10.29062/edu.v8i2.1011

Hendrix, E. (2019). *How Your Surrounding Affect the way You Study.* https://www.ucas.com/connect/blogs/how-your-surroundings-affect-way-you-study

Ihsan, H., D., Armayanti, A., & Upu, H. (2024). Solving Mathematics Problems Based on Visual Information Processing. Asian Journal of Education and Social Studies. https://doi.org/10.9734/ajess/2024/v50i31298

Khusaini, K., Mappadang, A., Sinaga, M., & Elizabeth, E. (2022). Academic interest determines the academic performance of undergraduate accounting students: Multinomial logit evidence. *Cogent Business & Management, 9.* https://doi.org/10.1080/23311975.2022.2101326

Kong, Y. (2021). The Role of Experiential Learning on Students' Motivation and Classroom Engagement. *Frontiers in Psychology, 12.* https://doi.org/10.3389/fpsyg.2021.771272

Leatham, K. R., & Peterson, B. E. (2010). Secondary mathematics cooperating teachers' perceptions of the purpose of student teaching. *Journal of Mathematics Teacher Education, 13*(2), 99-119. https://doi.org/10.1007/s10857-009-9125-0

Lenhard, W., & Lenhard, A. (2020). *Learning Difficulties.* https://www.oxfordbibliographies.com/view/document/obo-9780199756810/obo-9780199756810-0115.xml

Lim, W., Yoon, H., Bae, Y., & Kwon, O. (2023). The development of sociomathematical norms in the transition to tertiary exam-oriented individualistic mathematics education in an East Asian context. *Educational Studies in Mathematics,* 1-22. https://doi.org/10.1007/s10649-022-10203-y

Lu, L., Vongkulluksn, V., Xie, K., & Cheng, S. (2020). A person-centered approach to examining high-school students' motivation, engagement and academic performance. *Contemporary Educational Psychology, 62*, 101877. https://doi.org/10.1016/j.cedpsych.2020.101877

Merano, E. (2025). PEER STUDY HABITS TO IMPROVE ACADEMIC PERFORMANCE IN SCIENCE OF GRADE THREE PUPILS IN CABULISAN ELEMENTARY SCHOOL, INOPACAN DISTRICT, DIVISION OF LEYTE S.Y. 2016-2017. *International Journal of Advanced Research.* https://doi.org/10.21474/ijar01/20663

Murwani, F., Hulaikah, M., Degeng, I., & Sulton, S. (2020). The Effect of Experiential Learning and Adversity Quotient on Problem Solving Ability. *International Journal of Instruction, 13,* 869-884. https://doi.org/10.29333/iji.2020.13156a

Ogondiek, M., & Ndamage, J. (2025). Exploring the Factors Contributing to Low Performance in Mathematics Among Girls in Secondary Schools: A Case Study of Nyagatare, Rwanda. East

African *Journal of Education Studies.* https://doi.org/10.37284/eajes.8.1.2743

Peñabaena-Niebles, R., Correa, C., & Arroyo, Y. (2023). Influence of environmental conditions on students' learning processes: A systematic review. *Building and Environment.* https://doi.org/10.1016/j.buildenv.2023.110051

Peng, B., Tan, C., & Lyu, M. (2020). Academic Benefits from Parental Involvement are Stratified by Parental Socioeconomic Status: A Meta-analysis. *Parenting, 20,* 241-287. https://doi.org/10.1080/15295192.2019.1694836

Renninger, A., & Hidi, S. (2017). *The Power of Interest for Motivation and Engagement.* https://www.taylorfrancis.com/books/mono/10.4324/9781315771045/power_interest_motivation-engagement-ann-renninger-suzanne-hidi

Reiss, K., Werner, B., Richter-Gebert, J., Reinhold, F., Hoch, S., & Hofer, S. (2020). Digital support principles for sustained mathematics learning in disadvantaged students. *PLoS ONE, 15.* https://doi.org/10.1371/journal.pone.0240609

Seggie, F., Şekerler, S., Kızıltepe, Z., & Yolak, R. (2020). Teacher Attitudes and Influence on Student Academic Lives: Perceptions of High School Students. *Learning and Teaching, 9,* 25-44. https://doi.org/10.7459/lt/9.1.03

Shahzad, M., et al. (2020). *Impacts of Parental Support on Academic Performance Among Secondary School Students in Islamabad.* https://www.researchgate.net/publication/343690803_IMPACTS_OF_PARENT_L_SUPPORT_ON_ACADEMIC_PERFORMANCE_AMONG_SECONDARY_SCHOOL_STUDENTS_IN_ISLAMABAD#:~:text=Results%20of%20the%20prese%20research,whose%20parents%20were%20less%20supportive

Siregar, R., & Dewi, I. (2022). Peran Matematika dalam Kehidupan Sosial Masyarakat. Scaffolding: *Jurnal Pendidikan Islam dan Multikulturalisme.* https://doi.org/10.37680/scaffolding.v4i3.1888

Ullah, S., & Muhammad, B. (2024). Relationship between Teachers' Attitude towards Curriculum and Students' Academic Achievement at Secondary School Level. *Social Science Multidisciplinary Review.* https://doi.org/10.69591/ssmr.v1i.23

Warni, S., & Fadhilah, A. (2024). Students' perceptions toward the influence of teachers' attitudes on English learning achievement. *English Learning Innovation.* https://doi.org/10.22219/englie.v5i2.33798

Western Governors University. (2020). *Experiential Theory.* https://www.wgu.edu/blog/experiential-learning-theory2006.html?fbclid=IwAR1ZasWk84Fs5UZV1DHPQrL2bGUFVHpvwIF66dG2iFi_zNhjGxtm5P1JIWg

Weinberg, A. E., Basile, C. G., & Albright, L. (2011). The effect of an experiential learning program on middle school students' motivation toward mathematics and science. *RMLE Online, 35*(3), 1-12. http://search.proquest.com/docview/915971749?accountid=4117

Zhang, D., & Wang, C. (2020). The relationship between mathematics interest and mathematics achievement: mediating roles of self-efficacy and mathematics anxiety. *International Journal of Educational Research, 104*, 101648. https://doi.org/10.1016/j.ijer.2020.101648