



EXAMINING THE ROLE OF LEARNED HELPLESSNESS AND SELF-EFFICACY ON THE GRADE 10 STUDENTS' MATHEMATICS PERFORMANCE

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Abstract

This study assessed the learned helplessness, self-efficacy, and mathematics performance of Grade 10 students at Beatriz D. Durano Memorial National High School in Cebu Province for the School Year 2025–2026 as basis for an intervention plan using a descriptive-correlational research design. A total of 160 respondents were selected through proportionate stratified random sampling from a population of 168 students. Data were gathered using a three-part survey questionnaire adapted from existing studies, while the respondents' mathematics performance was based on their Third Quarter grades. The data gathered were treated using frequency count, percentage, weighted mean, standard deviation, and Spearman's rho. The findings revealed that most of the respondents were female and within the appropriate age range for Grade 10 students. Most parents were high school and college graduates, and many respondents came from families with a monthly income of ₱10,000 and below. The respondents manifested a moderate level of learned helplessness, a high level of self-efficacy, and satisfactory mathematics performance. Further findings showed that learned helplessness and self-efficacy had significant relationships with mathematics performance, although both relationships were weak. This indicates that other factors may also influence students' mathematics performance. Based on the findings, it was concluded that learned helplessness and self-efficacy are important factors associated with students' mathematics performance. Therefore, intervention strategies are recommended to help reduce learned helplessness and strengthen students' self-efficacy in learning mathematics.

Keywords: Mathematics Education, Learned Helplessness, Self-Efficacy, Mathematics Performance, Descriptive-Correlational Research Design, Cebu City, Philippines

Introduction

Mathematics stands as a cornerstone of education, essential for developing critical thinking, logical reasoning, and problem-solving skills vital in everyday life. From managing personal finances and interpreting data to advancing fields such as engineering, medicine, and technology, math applications permeate real-world scenarios, enabling informed decision-making and innovation. However, despite its undeniable value, countless students perceive mathematics as an insurmountable challenge, often stemming from repeated negative encounters such as struggles with problem-solving, activity completion, and exam failures.

These persistent difficulties may lead students to view mathematics as too difficult to master, fostering feelings of inadequacy and disengagement from learning tasks. Consequently, students may develop learned helplessness, characterized by a belief that they are unable to succeed despite their efforts, which can reduce persistence and engagement in mathematics-related activities. This condition is also associated with lower mathematics self-efficacy, as students may doubt their ability to perform mathematical tasks successfully, potentially contributing to poorer academic outcomes (Hawrot & Zhou, 2024).



Moreover, evidence from international assessments underscores this crisis in the Philippines. In the PISA 2022 results, Filipino students scored 355 in mathematics, far below the OECD average of 472, with only 16% achieving at least Level 2 proficiency (OECD, 2023). Similarly, the TIMSS 2019 assessment showed that Filipino Grade 4 students scored 297 in mathematics, the lowest average among the participating countries (Mullis et al., 2020). These results highlight the continuing challenges in mathematics education and the need to examine factors that may be associated with students' mathematics performance.

Similarly, learned helplessness emerges when students attribute failure to their own inability, convincing themselves they cannot master math effectively. This mindset leads to decreased effort, work avoidance, and opting out of learning opportunities, especially with non-routine problems. Consequently, students disengage from math activities, worsening their achievement.

In addition, low self-efficacy reinforces beliefs of ineffectiveness in math, compounding helplessness and hindering performance. Research shows self-efficacy strongly correlates with math outcomes; interventions that improve it can enhance students' confidence and results. Negative perceptions toward math ability create a barrier, limiting persistence and success (Yu et al. 2024).

In the classroom setting, students may demonstrate behaviors associated with difficulty in mathematics learning, such as hesitating to attempt challenging problems, giving up after unsuccessful attempts, expressing doubts about their mathematical abilities, or relying heavily on others for solutions. Such behaviors may be related to students' perceptions of control, confidence, persistence, and beliefs about their own capabilities. Examining learned helplessness and self-efficacy may therefore provide useful information for understanding students' mathematics learning experiences and performance.

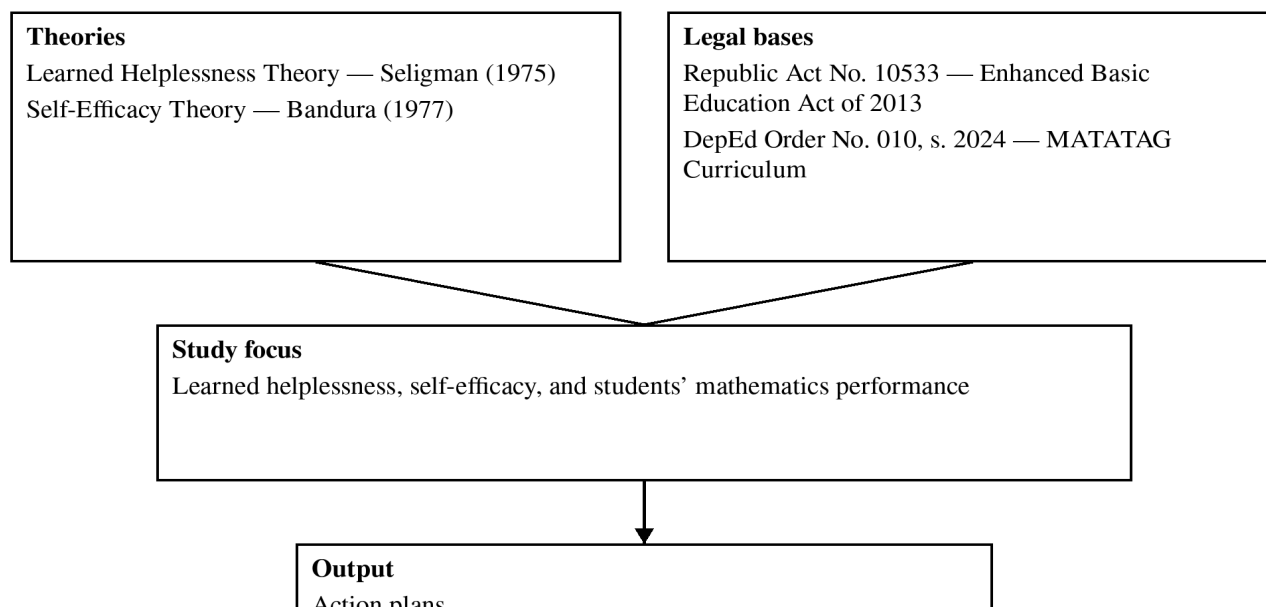
Such patterns not only diminish individual performance but also hinder national educational goals, perpetuating a cycle of disengagement and low achievement. It is imperative to evaluate students' levels of learned helplessness and self-efficacy, as these psychological factors directly influence mathematics performance and engagement (Yu, et al. 2024). By assessing their impact, this study aims to identify targeted strategies for intervention.

This research assessed the learned helplessness, self-efficacy, and mathematics performance of Grade 10 students at Beatriz D. Durano Memorial National High School for school year 2025-2026 as basis for action plans.

Theoretical and Legal Framework

This study is anchored on the Learned Helplessness Theory associated with Martin Seligman and the Self-Efficacy Theory developed by Albert Bandura. These theories provide a psychological foundation for understanding students' academic behavior and mathematics performance. Although these theories were developed decades ago, recent research continues to support their relevance in explaining students' motivation, persistence, self-beliefs, and academic achievement in mathematics (Holenstein et al., 2022; Hawrot & Zhou, 2024; Shone et al., 2024).

Figure 1 *Theoretical framework of the study*





The Learned Helplessness Theory explains that individuals who repeatedly experience failure or perceive situations as uncontrollable may develop the belief that their efforts do not influence outcomes. As a result, they may reduce their effort and persistence even when opportunities for success are available. Learned helplessness is associated with low motivation, reduced persistence, and negative perceptions of one's abilities. Recent studies have shown that learned helplessness remains relevant to mathematics learning and is associated with students' mathematics self-efficacy and learning experiences (Hawrot & Zhou, 2024; Miranda et al., 2025).

The reformulation of learned helplessness emphasizes the role of attributional explanations in how individuals interpret failure. Students who attribute failure to internal, stable, and global causes may be more likely to develop helplessness, such as believing that they are not good at mathematics or will never improve.

These maladaptive attribution patterns remain relevant in mathematics education, where students with lower confidence in their abilities may be more likely to avoid challenging mathematical tasks and experience difficulties in learning (Hawrot & Zhou, 2024; Miranda et al., 2025).

In mathematics education, learned helplessness manifests when students repeatedly experience difficulties in solving mathematical problems, failing examinations, or receiving negative feedback. Over time, these experiences foster the belief that effort does not lead to improvement. Consequently, students become less engaged in learning, avoid challenging mathematical tasks, and demonstrate reduced persistence when faced with difficulties.

The Self-Efficacy Theory explains how individuals' beliefs about their capabilities influence their effort, persistence, and performance. Self-efficacy refers to an individual's belief in his or her capability to perform actions required to achieve desired outcomes. Recent research continues to apply this theory in education to explain students' motivation, learning behaviors, and academic performance, particularly in mathematics (Holenstein et al., 2022; Shone et al., 2024; Montillano et al., 2025).

Recent research identifies four primary sources of self-efficacy: mastery experiences, vicarious experiences, social persuasion, and physiological and affective states. Students who successfully solve mathematical problems can strengthen their confidence through mastery experiences. Likewise, observing successful peers, receiving encouragement from teachers and parents, and managing anxiety and emotions can influence students' efficacy beliefs. Recent studies have examined these sources in relation to mathematics self-efficacy and performance (Hawrot & Zhou, 2024; Montillano et al., 2025).

In mathematics learning, students with strong self-efficacy are more likely to attempt challenging problems, apply effective problem-solving strategies, and persist despite mistakes or setbacks. Conversely, students with low self-efficacy tend to doubt their abilities, avoid difficult tasks, and give up more easily. Studies have consistently shown that higher mathematics self-efficacy is associated with better mathematics achievement and greater academic persistence (Shone et al., 2024; Sakellariou, 2022).

Self-efficacy is closely related to learned helplessness. While learned helplessness develops from repeated experiences of failure and perceived lack of control, self-efficacy develops through mastery experiences, social persuasion, vicarious experiences, and effective emotional regulation. Students with low self-efficacy are more vulnerable to developing learned helplessness, which, in turn, negatively affects mathematics performance. Conversely, strong self-efficacy serves as a protective factor against learned helplessness by promoting confidence, resilience, and persistence in learning mathematics (Hawrot & Zhou, 2024; Espera, 2025). Therefore, this study integrates both theories to explain how psychological beliefs influence students' mathematics performance.

This study is also grounded in national educational policies that promote quality education and learner-centered development. Republic Act No. 10533, otherwise known as the Enhanced Basic Education Act of 2013, institutionalized the K–12 Basic Education Program in the Philippines. The law mandates the implementation of a



learner-centered, inclusive, and developmentally appropriate curriculum that strengthens foundational competencies while promoting critical thinking, problem-solving, and lifelong learning skills.

The relevance of this law to the present study lies in its emphasis on the holistic development of learners. Mathematics performance is influenced not only by cognitive abilities but also by motivational and psychological factors, such as self-efficacy and learned helplessness. By examining these psychological variables, this study supports the goals of Republic Act No. 10533 in improving educational quality and learner outcomes.

DepEd Order No. 010, s. 2024, which implements the MATATAG Curriculum, further emphasizes the development of foundational skills, learner well-being, and improved academic performance. The policy recognizes that learners' emotional and psychological conditions significantly influence their academic success. By examining learned helplessness and self-efficacy, this study supports the MATATAG Curriculum's objective of strengthening foundational mathematics skills and fostering positive learner dispositions necessary for improved mathematics performance.

Related Literature

Hawrot and Zhou (2024) conducted a longitudinal study examining parent-child school-related interactions and helplessness in mathematics, with particular emphasis on the mediating role of mathematics self-efficacy. The researchers hypothesized that three dimensions of parent-child interactions would negatively predict helplessness in mathematics: parental assistance with homework, structure in the home learning environment, and parental responsiveness. Their findings confirmed that higher levels of school-related assistance, structure, and responsiveness in Grade 7 were significantly associated with lower helplessness in mathematics both concurrently and two years later in Grade 9. Critically, mathematics self-efficacy emerged as a partial mediator of these relationships, suggesting that supportive parenting practices reduce mathematical helplessness partly by enhancing students' confidence in their mathematical abilities.

Recent research has investigated the relationships among mathematics anxiety, perceived mathematics self-efficacy, and students' experiences in mathematics. Espera and Sanchez (2025) examined mathematics self-efficacy, mathematics anxiety, motivation, and numeracy among Grade 9 students and found significant relationships among these factors. Similarly, Peteros et al. (2025) examined mathematics anxiety and mathematics achievement among Filipino students. Their findings suggest that mathematics anxiety is related to students' confidence, engagement, and performance in mathematics. These findings indicate that mathematics self-efficacy plays an important role in understanding how affective factors may influence students' mathematics learning and achievement.

Additionally, Espera (2025) examined the mediating roles of mathematics motivation and mathematics anxiety in the relationship between mathematics self-efficacy and numeracy among Grade 9 students in mega schools in the Philippines. The study found that mathematics self-efficacy significantly influenced numeracy performance both directly and indirectly through its effects on motivation and anxiety. Higher self-efficacy predicted increased motivation and decreased anxiety, both of which contributed to better numeracy outcomes. Furthermore, the findings revealed that the relationship between self-efficacy and performance operates through multiple psychological pathways, with self-efficacy enhancing motivation while reducing mathematics anxiety. These results emphasize the important role of self-efficacy in improving students' academic performance in mathematics.

Shone et al. (2024) investigated the influence of mathematics perception and self-efficacy on students' mathematics achievement. The findings revealed significant positive relationships between mathematics perception and achievement, as well as between self-efficacy and achievement. Regression analysis further showed that 75.4% of the variance in students' mathematics achievement was explained by mathematics perception and self-efficacy. This substantial proportion of explained variance highlights the strong influence of psychological factors on mathematics performance. Moreover, qualitative findings revealed that students' beliefs about their mathematical capabilities and their attitudes toward mathematics shaped their engagement, persistence, and overall success in the subject.

Miranda et al. (2025) conducted a study on the development of detection mechanisms for learned helplessness in mathematics. The researchers highlighted significant challenges in identifying learned helplessness behaviors in



authentic educational settings, particularly in resource-constrained environments. These challenges included outdated devices, unreliable internet connectivity, limited instructional time, delays in obtaining institutional approvals, class cancellations, and curriculum gaps. The tutoring system incorporated features such as problem skipping, hints, difficulty-based sequencing, and adaptive game modes to monitor interaction patterns indicative of learned helplessness. The findings revealed that effectively detecting learned helplessness requires not only a strong theoretical foundation but also practical solutions to technological and logistical challenges. The study contributes to the existing literature by demonstrating that effective identification and intervention for learned helplessness require consideration of contextual and technological factors, particularly in developing countries where educational resources may be limited. These findings emphasize the importance of designing intervention systems that are both theoretically sound and responsive to real-world educational conditions.

Holenstein et al. (2022) investigated the influence of self-efficacy and self-concept on mathematics achievement in the context of mathematical modeling. The study examined the individual and combined contributions of these two self-belief constructs to students' performance on mathematical modeling tasks. The findings revealed that both self-efficacy and self-concept independently contributed to mathematics achievement after controlling for prior performance. Moreover, self-efficacy demonstrated a stronger relationship with achievement on novel mathematical modeling tasks, where students had limited prior mastery experiences.

The study further demonstrated that self-efficacy and self-concept, although related, represent distinct dimensions of students' mathematical self-beliefs. Self-efficacy was more closely associated with task-specific confidence and judgments about capability, whereas self-concept reflected broader evaluations of mathematical competence. These findings suggest that both constructs contribute uniquely to mathematics achievement through different psychological mechanisms.

These findings highlight the distinct roles of self-efficacy and self-concept in mathematics learning, demonstrating that both constructs contribute significantly to students' mathematics achievement. The results further suggest that strengthening students' task-specific confidence is particularly important when they encounter unfamiliar mathematical problems that require higher-order thinking, mathematical modeling, and real-world application. Overall, the study emphasizes that fostering both self-efficacy and self-concept can enhance students' confidence and improve their mathematics performance.

Methodology

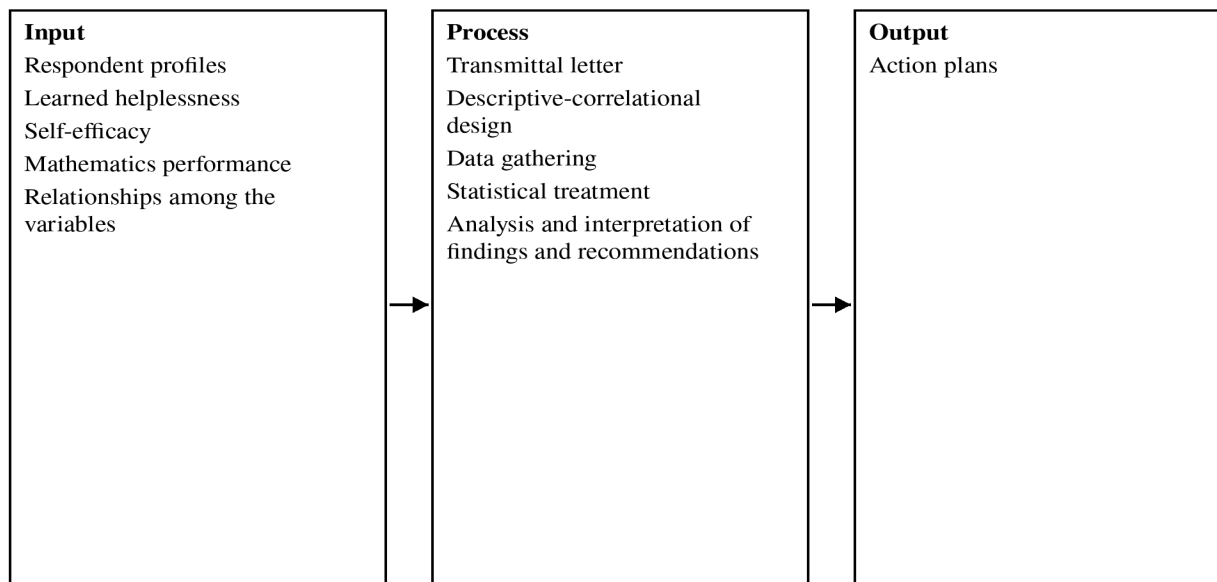
Research Design

This study utilized a descriptive-correlational research design, which aimed to describe the status of the variables and determine the relationships among them without manipulating any of the variables involved. According to Creswell (2014), correlational research was a quantitative method that measured the degree of relationship between two or more variables through statistical analysis. This research design was appropriate because the researcher intended to examine the associations among the variables as they naturally occurred within the study population. However, this design did not establish cause-and-effect relationships; instead, it determined the degree and direction of the relationships among learned helplessness, self-efficacy, and mathematics performance.



Figure 2

Input–process–output model of the study



In this study, the independent variables were learned helplessness and self-efficacy, while the dependent variable was mathematics performance. The descriptive aspect of the design determined the respondents' levels of learned helplessness and self-efficacy, as well as their mathematics performance. Meanwhile, the correlational aspect examined whether significant relationships existed between learned helplessness and mathematics performance and between self-efficacy and mathematics performance.

The collected data were systematically organized, tabulated, and statistically analyzed. Descriptive statistics were used to summarize the respondents' profiles and the levels of the study variables, while inferential statistics were employed to determine the significance of the relationships among the variables at the 0.05 level of significance.

Flow of the Study

This study utilized the Input–Process–Output (IPO) model to present the research process in examining learned helplessness, self-efficacy, and mathematics performance among Grade 10 students.

The input included the respondents' profiles, levels of learned helplessness and self-efficacy, and mathematics performance.

The process involved securing permissions, administering the questionnaires, collecting mathematics grades, organizing the data, and applying appropriate statistical tools.

The output included the assessed levels of the study variables, their identified relationships, and the proposed action plan based on the findings.

Research Environment

This study was conducted at Beatriz D. Durano Memorial National High School in Cebu Province, a public secondary school administered by the Department of Education, during School Year 2025–2026.

Figure 3

Location map and school photograph from the source thesis

Cebu Province map



Beatriz D. Durano Memorial National High School





Beatriz D. Durano Memorial National High School is an established public secondary school located in northern Cebu Province. It offers junior high school programs aligned with the standards and requirements of the Department of Education. The school has participated in various academic competitions, including mathematics and science contests, and has implemented programs and activities designed to enhance students' academic performance, participation, and engagement.

The institution implements the K to 12 Basic Education Curriculum and caters to learners from diverse socio-economic backgrounds. With its varied educational environment and focus on academic development, the school provided an appropriate setting for examining the levels of learned helplessness and self-efficacy and their relationship with mathematics performance among Grade 10 students

Respondents and Sampling

The respondents of this study were Grade 10 students enrolled at Beatriz D. Durano Memorial National High School in Cebu Province during School Year 2025–2026. They were considered appropriate participants because they were currently taking Mathematics and had existing academic performance records for the Third Quarter. At this level, students are expected to deal with mathematical concepts that are more complex and abstract, requiring them to apply different skills and strategies in solving mathematical tasks. These learning experiences may also influence how students perceive their own abilities and respond to difficulties encountered in Mathematics. Thus, Grade 10 students were considered suitable for examining the role of learned helplessness and self-efficacy in relation to their mathematics performance.

The study employed stratified random sampling to select the respondents from the Grade 10 population of Beatriz D. Durano Memorial National High School. The 168 Grade 10 students were grouped according to their respective sections, namely Acacia, Mahogany, Yakal, Kamagong, and Narra, which served as the strata of the study. To ensure that each section was adequately represented, 32 students were randomly selected from each section. This resulted in a total sample of 160 respondents. The use of stratified random sampling allowed the researcher to obtain respondents from all Grade 10 sections while maintaining a fair selection process within each group.



Table 1

Distribution of the respondents

Section	N	n	%
Acacia	34	32	20.00
Mahogany	34	32	20.00
Yakal	34	32	20.00
Kamagong	33	32	20.00
Narra	33	32	20.00
Total	168	160	100

Research Instrument

The study utilized a three-part survey questionnaire to gather the data needed for the investigation. Part I. Student's Profile. This part gathered information about the respondents' age, gender, parents' highest educational attainment, and combined family monthly income.

Part II. Learned Helplessness Survey. This part utilized an adapted questionnaire based on Lan et al. (2024) to assess the respondents' level of learned helplessness in learning Mathematics. The items described perceptions of control, attribution of failure, beliefs about ability, and persistence in performing tasks.

Part III. Self-Efficacy Survey. This part utilized a questionnaire based on Gaumer Erickson et al. (2018) to assess the respondents' self-efficacy in learning Mathematics. The items measured students' beliefs regarding their capabilities, effort, persistence, and ability to improve their skills.

The respondents' mathematics performance was determined using their Third Quarter Mathematics grades obtained from the official school records. Permission was secured from the appropriate school authorities before accessing the respondents' grades. All information gathered was treated confidentially and was used solely for the purposes of the study.

Data Collection and Ethical Considerations

Preliminary Stage. The researcher prepared a formal letter requesting permission from the Schools Division Superintendent and the School Principal. Upon approval, the researcher coordinated with the mathematics teachers and oriented them regarding the purpose and procedures of the study.

Data Gathering Stage. The researcher conducted an orientation among the selected respondents, explained the purpose of the study, and secured their informed consent. The survey questionnaires were distributed, and sufficient time was allotted for the respondents to complete them. After the retrieval of the completed questionnaires, the researcher obtained the respondents' Third Quarter Mathematics grades from the subject teachers with proper authorization.

Post Data Gathering Stage. The collected data were sorted, tabulated, and summarized. Appropriate statistical tools were applied to analyze and interpret the data. The results served as the basis for the conclusions and the proposed action plan. All collected data were treated with strict confidentiality in accordance with the Data Privacy Act of 2012 (Republic Act No. 10173, 2012). The identities of the respondents were not disclosed, and all information gathered was used solely for academic purposes.

This study was conducted in accordance with the ethical principles governing research involving human participants. Prior to the conduct of the study, parental consent and student assent were obtained to ensure that participation was informed and voluntary. The respondents were informed about the purpose and procedures of the study and were assured that they could withdraw from participation at any time without penalty or adverse academic consequences. Participation in the study had no effect on the respondents' grades or academic standing. The researcher also ensured that the respondents were treated with respect and fairness throughout the study. The rights, welfare, and privacy of the respondents were considered at every stage of the research process.



The researcher strictly observed the principles of confidentiality and anonymity throughout the conduct of the study. Identification codes were used instead of the respondents' names to protect their identities. All information collected was treated confidentially, securely stored, and used solely for academic research purposes. Access to the collected data was limited to the researcher and was handled only for purposes directly related to the study. The collected data will be properly disposed of one year after the completion of the study in accordance with the established data management procedures. The study also complied with the provisions of the Data Privacy Act of 2012 (Republic Act No. 10173).

Statistical Analysis

Frequency Count. This was used to determine the number of respondents in each profile category.

Percentage. This was used to describe the proportion of respondents in each category of the profile variables.

Weighted Mean. This was used to determine the levels of learned helplessness and self-efficacy of the respondents.

Standard Deviation. This was used to measure the variability or dispersion of the respondents' responses.

Spearman Rho. This was used to determine the significance of the relationship between learned helplessness and mathematics performance, as well as between self-efficacy and mathematics performance, at the 0.05 level of significance.

The source uses the following questionnaire interpretation ranges: 4.21–5.00, Very High; 3.41–4.20, High; 2.61–3.40, Moderate; 1.81–2.60, Low; and 1.00–1.80, Very Low.

Findings

Age and Gender

Table 2

Age and gender of the respondents

Age in years	Female f	Female %	Male f	Male %	Total f	Total %
17 and above	1	0.63	12	7.50	13	8.13
16	41	25.63	30	18.75	71	44.38
15	43	26.88	30	18.75	73	45.63
14	1	0.63	2	1.25	3	1.88
Total	86	53.75	74	46.25	160	100.00

As shown in Table 2, of the 160 Grade 10 student respondents, 86 (53.75%) were female and 74 (46.25%) were male. This indicates that female students comprised a slightly larger proportion of the respondents than male students, although the distribution remained relatively balanced. Such a distribution provides adequate representation of both sexes, allowing the findings to reflect the characteristics of the target population.

With respect to age, the largest group consisted of 15-year-old students, accounting for 73 respondents (45.63%), followed closely by those who were 16 years old, with 71 respondents (44.38%). Meanwhile, 13 respondents (8.13%) were aged 17 years and above, while only three respondents (1.88%) were 14 years old. These results indicate that the majority of the respondents belonged to the expected age range for Grade 10 learners under the Philippine basic education system, suggesting that most students progressed through school at an age generally appropriate for their grade level.

A closer examination of the age and gender distribution further shows that among the female respondents, the largest group was composed of 15-year-old students, with 43 respondents (26.88%). Among the male respondents, the highest frequencies were observed among those aged 15 and 16 years, with 30 respondents (18.75%) each. Overall, the findings demonstrate that the respondents were generally distributed within the age levels commonly observed among secondary school learners, thereby providing a representative demographic profile for the study.



Parents Highest Educational Attainment

Table 3

Parents' highest educational attainment

Educational attainment	Mother f	Mother %	Father f	Father %
Doctorate Graduate	1	0.63	2	1.25
With Doctorate Units	0	0.00	2	1.25
Master's Degree	8	5.00	9	5.63
With Master's Units	0	0.00	0	0.00
College Graduate	59	36.88	55	34.38
College Level	16	10.00	25	15.63
High School Graduate	47	29.38	38	23.75
High School Level	15	9.38	11	6.88
Elementary Graduate	5	3.13	7	4.38
Elementary Level	5	3.13	7	4.38
No Formal Education	4	2.50	4	2.50
Total	160	100.00	160	100.00

As reflected in Table 3, the highest frequency among mothers was recorded among college graduates, with 59 respondents (36.88%), followed by high school graduates, with 47 respondents (29.38%). The lowest frequency was observed among doctorate graduates, with only one respondent (0.63%), while none of the mothers reported having earned master's units or doctorate units. These findings indicate that a considerable proportion of the respondents' mothers had attained tertiary education, suggesting that many students may have access to parental guidance supported by formal educational experiences.

Similarly, among fathers, the highest frequency was recorded among college graduates, with 55 respondents (34.38%), followed by high school graduates, with 38 respondents (23.75%). The lowest frequencies were observed among those with doctorate degrees and doctorate units, with two respondents (1.25%) each, while none reported having master's units. Overall, the findings indicate that most respondents came from families whose parents had attained either secondary or tertiary education.

The results suggest that many parents possessed educational backgrounds that could enable them to appreciate the value of education, encourage positive learning behaviors, and provide appropriate academic guidance to their children. However, the presence of parents with only elementary education or no formal education indicates that some learners may have limited access to academic assistance at home, which could influence their learning experiences and academic progress. Nevertheless, parental educational attainment alone does not determine the amount or quality of support that parents provide, as other family and contextual factors may also influence students' learning experiences.

Family Monthly Income

Table 4

Respondents' combined family monthly income

Monthly income in pesos	f	%
above 30,000	46	28.75
25,001-30,000	8	5.00
20,001-25,000	11	6.88
15,001-20,000	21	13.13
10,001-15,000	24	15.00
10,000 and below	50	31.25
Total	160	100.00

Overall, the distribution presented in Table 4 demonstrates that the respondents came from varied socio-economic backgrounds, with the largest proportion belonging to families earning ₱10,000 and below and the second-largest group coming from families earning above ₱30,000. This variation provides relevant socio-economic context for



interpreting the respondents' learned helplessness, self-efficacy, and mathematics performance. While family income may influence access to learning resources and opportunities, the findings of recent studies indicate that its relationship with academic performance should be understood alongside other personal, family, and school-related factors.

Learned Helplessness

Table 5

Level of learned helplessness in learning Mathematics

No.	Indicator	WM	SD	Description
1	No matter how hard I try, things never seem to work out the way I want them to.	3.21	1.13	Moderate
2	When I do not succeed at a task, I find myself blaming my own stupidity for my failure.	3.39	1.25	Moderate
3	I feel that I have little control over the outcomes of my work.	3.26	0.99	Moderate
4	I feel that anyone else could be better than me at most tasks.	3.53	1.27	High
5	No matter how much energy I put into a task, I feel I have no control over the outcome.	3.18	1.20	Moderate
6	If I complete a task successfully, it is probably because of my ability.	3.42	1.15	High
7	I have the ability to solve most of life's problems.	3.26	1.12	Moderate
8	My behavior seems to influence the success of a work group.	3.29	1.11	Moderate
9	When I do not succeed at a task, I do not attempt any similar tasks because I feel that I would fail them also.	2.92	1.18	Moderate
10	When I perform poorly, it is because I do not have the ability to perform better.	3.16	1.20	Moderate
11	I do not place myself in situations in which I cannot predict the outcome.	3.13	1.14	Moderate
12	I accept tasks even if I have not sure that I will success at them.	3.38	1.12	Moderate
13	I try new tasks if I have failed similar ones in the past.	3.42	1.02	High
14	I am successful at most tasks I try.	3.39	0.96	Moderate
	Aggregate	3.28	1.13	Moderate

Note. WM = weighted mean; SD = standard deviation. Source item wording and aggregate values are retained.

As shown in Table 5, the overall weighted mean of 3.28 with an aggregate standard deviation of 1.13 indicates a moderate level of learned helplessness among the respondents. This means that the students sometimes experienced feelings associated with helplessness in mathematics, but these feelings were not consistently strong. Overall, the findings suggest that although students occasionally experienced self-doubt and perceived difficulties in mathematics, they generally maintained the capacity to cope with academic challenges.

The highest weighted mean was obtained by the statement, "I feel that anyone else could be better than me at most tasks," with a weighted mean of 3.53, verbally interpreted as High. This indicates that many respondents frequently compared themselves unfavorably with others, reflecting feelings of inadequacy that may influence their confidence in mathematics. This was followed by the statements, "If I complete a task successfully, it is probably because of my ability," and "I try new tasks if I have failed similar ones in the past," both obtaining a weighted mean of 3.42 and verbally interpreted as High. These findings suggest that despite experiencing self-doubt, many students still recognized their own abilities and remained willing to attempt challenging tasks, indicating the presence of adaptive responses alongside experiences associated with learned helplessness.

In contrast, the statement "When I do not succeed at a task, I do not attempt any similar tasks because I feel that I would fail them also" obtained the lowest weighted mean of 2.92, interpreted as Moderate. Likewise, the statement "I do not place myself in situations in which I cannot predict the outcome" obtained a weighted mean of 3.13, also interpreted as Moderate. These results indicate that although respondents occasionally experienced uncertainty and fear of failure, they did not consistently avoid challenging situations. Instead, many remained willing to engage in learning activities despite previous setbacks.



Self Efficacy

Table 6

Level of self-efficacy in learning Mathematics

No.	Indicator	WM	SD	Description
1	This year, I will be able to understand what has been taught in class.	3.43	1.14	High
2	If I work hard enough, I can figure out anything.	3.73	1.17	High
3	If I practiced every day, I could develop just about any skill.	3.79	1.13	High
4	I keep attempting to complete anything essential to me once I've decided to do it, even if it's more difficult than I anticipated.	3.41	1.12	High
5	I feel confident in my ability to attain the objectives I have set for myself.	3.29	1.12	Moderate
6	Instead of getting discouraged when I'm working on a difficult task, I concentrate on my progress.	3.39	1.15	Moderate
7	Whatever career track I select, I will be successful.	3.41	1.07	High
8	Whatever college major I choose, I will be successful.	3.36	1.08	Moderate
9	I believe hard work pays off.	3.93	1.24	High
10	My ability grows with effort.	3.77	1.21	High
11	I believe that the brain can grow and expand similarly to a muscle.	3.56	1.15	High
12	I believe that anyone, regardless of background, can dramatically improve their depth of talent.	3.74	1.16	High
13	I have a lot of control over my basic level of skill.	3.50	1.06	High
	Aggregate	3.56	1.14	High

As shown in Table 6, the overall weighted mean of 3.56 with an aggregate standard deviation of 1.14 indicates a high level of self-efficacy among the respondents. This finding suggests that the students generally believed in their capability to perform mathematical tasks successfully and overcome learning challenges. The results indicate that most respondents possessed positive beliefs about their academic abilities, which may contribute to greater motivation, persistence, and engagement in mathematics learning.

The highest weighted mean was obtained by the statement, "I believe hard work pays off," with a weighted mean of 3.93, verbally interpreted as High. This was followed by the statements, "If I practiced every day, I could develop just about any skill," with a weighted mean of 3.79, and "My ability grows with effort," with a weighted mean of 3.77, both also verbally interpreted as High. These findings indicate that the respondents strongly believed that consistent effort, continuous practice, and perseverance contribute to academic success. Such responses reflect a positive learning orientation in which students recognize that mathematical ability can be improved through dedication and sustained effort rather than being determined solely by innate ability.

Conversely, the statement "I feel confident in my ability to attain the objectives I have set for myself" obtained the lowest weighted mean of 3.29, verbally interpreted as Moderate. Likewise, the statement "Whatever college major I choose, I will be successful" obtained a weighted mean of 3.36, also interpreted as Moderate. Although these indicators remained within the positive range, they suggest that some respondents still experienced uncertainty regarding their long-term academic goals and future success. This indicates that while students generally possessed confidence in their learning abilities, additional support may be needed to strengthen their confidence in achieving personal aspirations and future educational plans.



Mathematics Performance

Table 7

Level of mathematics performance

Level	Grade range	f	%
Outstanding	90-100	26	16.25
Very Satisfactory	85-89	47	29.38
Satisfactory	80-84	57	35.63
Fairly Satisfactory	75-79	30	18.75
Did not Meet the Expectations	Below 75	0	0.00
Total		160	100.00
Mean			83.96
St. Dev.			5.51

As shown in Table 7, the highest frequency of respondents obtained a Satisfactory rating, with 57 respondents (35.63%). This was followed by those who achieved a Very Satisfactory rating, with 47 respondents (29.38%), and those who obtained an Outstanding rating, with 26 respondents (16.25%). Meanwhile, 30 respondents (18.75%) were classified under the Fairly Satisfactory category. Notably, none of the respondents fell under the Did Not Meet Expectations category, indicating that all students obtained passing grades in Mathematics during the grading period covered by the study.

The computed mean grade of 83.96, with a standard deviation of 5.51, indicates that the respondents demonstrated an overall Satisfactory level of mathematics performance. This suggests that, on average, the students attained an acceptable level of mastery of the prescribed learning competencies. The standard deviation of 5.51 indicates that there was some variation in the grades of the respondents, although the overall performance remained within the Satisfactory category.

Learned Helplessness and Mathematics Performance

Table 8

Relationship between learned helplessness and mathematics performance

Variables	Spearman rho	Strength	p value	Decision	Result
Learned Helplessness and Mathematics Performance	0.252*	Weak Positive	0.001	Reject Ho	Significant

Note. Significant at $p < .05$, two-tailed.

As shown in Table 8, the computed p-value of 0.001 is lower than the 0.05 level of significance. Therefore, the null hypothesis was rejected, indicating that there was a statistically significant relationship between learned helplessness and mathematics performance. The computed Spearman's rho coefficient of 0.252 indicates a weak positive correlation, suggesting that although the two variables were significantly associated, the strength of their relationship was relatively low.

Self Efficacy and Mathematics Performance

Table 9

Relationship between self-efficacy and mathematics performance

Variables	Spearman rho	Strength	p value	Decision	Result
Self-efficacy and Mathematics Performance	0.250*	Weak Positive	0.001	Reject Ho	Significant

Note. Significant at $p < .05$, two-tailed.



As reflected in Table 9, the computed p-value of 0.001 is lower than the 0.05 level of significance. Therefore, the null hypothesis was rejected, indicating that there was a statistically significant relationship between self-efficacy and mathematics performance. The computed Spearman's rho coefficient of 0.250 indicates a weak positive correlation, suggesting that as students' self-efficacy increased, their mathematics performance also tended to improve, although the strength of the relationship was relatively low.

The positive direction of the relationship observed in this study should be interpreted with caution. Although learned helplessness is generally associated with less favorable academic outcomes, the weak positive correlation indicates that the respondents who reported moderate levels of learned helplessness also demonstrated satisfactory mathematics performance. This finding suggests that some students may experience occasional feelings of self-doubt or uncertainty while still maintaining satisfactory academic achievement, possibly because these feelings are offset by other protective factors such as high self-efficacy, effective teacher support, positive classroom experiences, or strong family encouragement.

The findings indicate that students who reported stronger self-efficacy also tended to have higher mathematics performance. However, the correlation was weak, indicating that the relationship between the two variables was relatively small. The result suggests that self-efficacy is significantly associated with mathematics performance in the present sample, but it should not be interpreted as evidence that self-efficacy causes higher academic performance. Other factors, such as prior mathematical knowledge, study habits, instructional practices, classroom environment, family support, and learning motivation, may also be related to students' mathematics performance.

Output of the Study

This chapter presents the proposed Mathematics Performance Enhancement Intervention Plan, which was developed based on the findings of the study. The intervention plan aims to address the identified levels of learned helplessness and self-efficacy while enhancing the mathematics performance of Grade 10 students at Beatriz D. Durano Memorial National High School. Specifically, it provides appropriate strategies and activities designed to strengthen students' confidence, resilience, motivation, and engagement in mathematics learning, thereby promoting improved academic performance.

The proposed intervention plan will be presented to the School Head, Mathematics Teachers, and Guidance Personnel for review and approval prior to implementation. Upon approval, the program will be implemented collaboratively by school administrators, mathematics teachers, guidance counselors, students, and parents. The identified intervention activities will be integrated into classroom instruction and school-based programs to promote students' academic and personal development. Regular monitoring and evaluation will be conducted throughout the implementation period to assess the effectiveness of the intervention. Feedback from students, teachers, and other stakeholders will be utilized to improve the implementation process and ensure the sustainability of the program.



Table 10

Proposed action plan for A. Learned Helplessness in Mathematics

Field	Planned details
Areas of Concern	A. Learned Helplessness in Mathematics
Objectives	Reduce learned helplessness among Grade 10 students by promoting resilience, positive thinking, and persistence in mathematics.
Strategies	Conduct growth mindset seminars, motivational talks, counseling, and positive reinforcement during Mathematics classes.
Persons Involved	School Administrators, Guidance Counselor, Mathematics Teachers
Budget	₱10,000
Source of Budget	School MOOE
Time Frame	June 2026 – March 2027
Expected Outcome	Reduced feelings of helplessness, increased resilience, and improved motivation in learning Mathematics.
Actual Accomplishment	
Remarks	

Table 11

Proposed action plan for B. Self- Efficacy in Mathematics

Field	Planned details
Areas of Concern	B. Self- Efficacy in Mathematics
Objectives	Strengthen students' self- efficacy by enhancing confidence in solving mathematical problems.
Strategies	Conduct problem- solving workshops, mastery activities with feedback, peer tutoring, cooperative learning, and student recognition.
Persons Involved	School Administrators, Mathematics Teachers, Students
Budget	₱12,000
Source of Budget	School MOOE
Time Frame	June 2026 – March 2027
Expected Outcome	Increased confidence, stronger self- belief, and greater willingness to solve Mathematics tasks independently .
Actual Accomplishment	
Remarks	



Table 12

Proposed action plan for C. Mathematics Performance

Field	Planned details
Areas of Concern	C. Mathematics Performance
Objectives	Improve Grade 10 students' mathematics performance through academic support and differentiated instruction.
Strategies	Conduct remedial and enrichment classes, weekly drills and performance tasks, progress monitoring, and differentiated instruction based on learners' needs.
Persons Involved	School Administrators, Mathematics Teachers, Students
Budget	₱15,000
Source of Budget	School MOOE
Time Frame	June 2026 – March 2027
Expected Outcome	Improved academic performance, higher Mathematics grades, and increased learner achievement.
Actual Accomplishment	
Remarks	

Table 13

Proposed action plan for D. Parent and School Support

Field	Planned details
Areas of Concern	D. Parent and School Support
Objectives	Strengthen home-school partnership to support students' mathematics learning and development.
Strategies	Conduct parent orientations, provide academic updates, monitor assignments, and hold parent- teacher conferences.
Persons Involved	School Administrators, Teachers, Parents
Budget	₱8,000
Source of Budget	School MOOE / PTA Funds
Time Frame	June 2026 – March 2027
Expected Outcome	Increased parental involvement and stronger support for improved student performance.
Actual Accomplishment	
Remarks	

Discussion

The findings have important implications for mathematics instruction. Students with high self-efficacy are generally more willing to participate in classroom discussions, employ effective problem-solving strategies, and persevere despite experiencing academic setbacks. Their confidence enables them to approach challenging mathematical concepts with greater determination and resilience. Therefore, mathematics teachers should continue providing mastery-oriented learning experiences, constructive feedback, collaborative learning opportunities, and positive reinforcement to further strengthen students' confidence and sustain their motivation to learn mathematics.

Recent research provides support for considering learned helplessness together with other psychological and contextual factors in understanding students' mathematics learning. Hawrot and Zhou (2024) found that mathematics self-efficacy played an important role in the relationship between parent-child school-related interactions and helplessness in mathematics. Their findings suggest that students' feelings of helplessness may be understood within a broader learning environment in which family interactions and students' beliefs about their mathematical abilities are relevant.



Similarly, Buzzai et al. (2021) found that learned helplessness and mastery orientation were relevant to the relationship between school alienation and academic achievement among secondary students. Their findings highlight that students' academic outcomes are associated with multiple motivational and school-related factors rather than learned helplessness alone. This supports the present finding that the weak correlation between learned helplessness and mathematics performance should not be interpreted as evidence that learned helplessness independently determines students' academic achievement.

The present finding may also be viewed in relation to recent research on mathematics self-efficacy and achievement. Zhang et al. (2024) found that mathematics self-efficacy positively predicted later mathematics achievement, while perceived teacher support also demonstrated a predictive effect on students' mathematics achievement. These findings provide a possible context for the present result because students may experience some feelings of helplessness while simultaneously possessing self-efficacy and receiving support that help them maintain satisfactory academic performance.

Recent research supports the observed positive relationship between self-efficacy and mathematics performance. Sakellariou (2022) found evidence of a reciprocal relationship between mathematics self-efficacy and mathematics achievement among high school students, suggesting that students' beliefs about their mathematical capabilities and their academic performance may influence one another over time. Similarly, Du et al. (2021) reported reciprocal relationships among mathematics self-efficacy, mathematics achievement, mathematics interest, and mathematics anxiety, indicating that students' beliefs and experiences in mathematics learning are closely interconnected.

The OECD (2024) likewise reported that mathematics self-efficacy was positively associated with students' motivation and persistence. Students who were more confident in solving mathematics tasks tended to set more challenging goals, exert greater effort, and persevere longer when facing difficulties. The report also found a positive association between mathematics self-efficacy and mathematics performance after accounting for students' and schools' socio-economic profiles. However, the strength of this association varied across educational contexts, including the Philippines.

Conclusion and Recommendations

Based on the findings of the study, the following conclusions were drawn. The respondents were predominantly female and were mostly within the 15- to 16-year-old age group. Their parents' educational attainment and combined family monthly income reflected varied socioeconomic and educational backgrounds. The respondents demonstrated a moderate level of learned helplessness in learning Mathematics, indicating that although they experienced some feelings of self-doubt, uncertainty, and perceived lack of control, these experiences were not consistently strong across the group. They also demonstrated a high level of self-efficacy in learning Mathematics, indicating that they generally possessed positive beliefs regarding their capabilities, effort, persistence, and ability to improve their skills.

The respondents demonstrated a satisfactory level of mathematics performance based on their Third Quarter Mathematics grades. Although the overall performance was satisfactory, the results indicate an opportunity to further strengthen students' mathematical knowledge, skills, and achievement. Furthermore, there was a statistically significant relationship between learned helplessness and mathematics performance. The relationship was weak and positive, with a Spearman's rho coefficient of 0.252 and a p-value of 0.001. Thus, the null hypothesis stating that there is no significant relationship between learned helplessness and mathematics performance was rejected. The positive direction of the relationship should be interpreted cautiously, particularly in relation to the theoretical expectation regarding learned helplessness.

There was also a statistically significant positive relationship between self-efficacy and mathematics performance. The relationship was weak, with a Spearman's rho coefficient of 0.250 and a p-value of 0.001. Thus, the null hypothesis stating that there is no significant relationship between self-efficacy and mathematics performance was rejected. The result indicates that higher self-efficacy was associated with better mathematics performance among the respondents, although the weak correlation suggests that other factors may also be related to students' academic performance. Based on these findings, a Mathematics Performance Enhancement Intervention Plan was proposed to



provide targeted support for strengthening students' mathematical learning, sustaining self-efficacy, and addressing experiences associated with learned helplessness.

In light of the findings and conclusions of the study, the school administrators, teachers, guidance counselors, parents, and students are encouraged to support strategies and activities that strengthen students' self-efficacy, persistence, and positive learning behaviors in Mathematics. Future researchers may conduct similar studies using larger and more diverse samples and examine other factors and interventions related to mathematics performance.

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