ISSN (Online): 2455-3662
EPRA International Journal of Multidisciplinary Research (IJMR) - Peer Reviewed Journal
Volume: 12| Issue: 11| November 2026|| Journal DOI: 10.36713/epra2013 || SJIF Impact Factor 2026: 8.753 || ISI Value: 1.188

SELF-DIRECTED LEARNING READINESS AND ACADEMIC PERFORMANCE IN MATHEMATICS

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Article DOI: https://doi.org/10.36713/epra32059
DOI No: 10.36713/epra32059

ABSTRACT

This study aimed to determine the relationship between self-directed learning readiness and academic performance in mathematics among Grade 10 students of Arena Blanco National High School during the academic year 2026–2027. It focused on three dimensions of self-directed learning readiness: Self-Confidence and Intelligence, Self-Monitoring and Responsibility, and Attitude towards Mathematics Learning. A quantitative-correlational research design was employed. The respondents were selected based on their accessibility, availability, and willingness to participate. Weighted mean was used to determine the level of self-directed learning readiness, while mean, frequency count, and percentage were used to describe academic performance in mathematics. Pearson product-moment correlation was utilized to determine the significant relationship between self-directed learning readiness and academic performance. The findings revealed that the respondents demonstrated an average level of self-directed learning readiness in terms of Self-Confidence and Intelligence and Self-Monitoring and Responsibility, while their Attitude towards Mathematics Learning was high. Their academic performance in mathematics was classified as fairly satisfactory. Furthermore, a significant relationship was found between Self-Confidence and Intelligence and academic performance in mathematics. However, no significant relationship was found between academic performance and the other two dimensions: Self-Monitoring and Responsibility and Attitude towards Mathematics Learning. The study concludes that self-directed learning readiness has varying relationships with students' academic performance in mathematics. These findings may help teachers identify areas for improvement and develop strategies that strengthen students' confidence, responsibility, and positive attitudes toward mathematics learning.

KEYWORDS: *Academic Performance in Mathematics, Attitude towards Mathematics learning, Self-confidence and intelligence, Self-directed Learning Readiness, and Self-monitoring and responsibility.*

INTRODUCTION

Mathematics is crucial for personal and societal development, especially for high school students. Proficiency in mathematics is essential for problem-solving and future careers. Self-directed learning readiness, which involves setting goals, seeking resources, and independent learning, is essential for high school students. Factors influencing mathematics performance include self-confidence and intelligence, self-monitoring and responsibility, and attitude towards mathematics learning. Nevertheless, the connection between self-directed learning and mathematics performance is still insufficiently investigated.

As explained by Dagdag & Calimag (2023), self-confidence and intelligence (SCI) is the belief that one can study mathematics based on their own learning capability. The key practices for monitoring personal advancement in mathematics learning are included in the concept of self-monitoring and responsibility (SMR). The term "attitude towards mathematics learning" (AML) describes how students react to the lessons they have learned in mathematics.

Based on Phan et al. (2021), self-confidence plays a role in students' readiness for self-directed learning. Self-efficacious students may feel the confidence to be responsible for their learning, set learning objectives, and monitor themselves in terms of the learning process. It means that self-confidence can play a part in students' readiness for self-directed learning.

There are several aspects that have been highlighted by various researchers as some of the causes of underperformance by students in Mathematics. According to Makondo & Makondo (2020), such aspects include the learners' attitude towards Mathematics, lack of teaching experience on the part of the teachers, socioeconomic status, the application of wrong teaching approaches and strategies, and low teacher motivation. As suggested by Manaud & Aggabao (2024), the application of the self-directed learning approach is helpful for cultivating positive attitudes towards math, metacognitive skills, critical and creative thinking, and self-efficacy.

Academic performance in Mathematics is an essential measure of their learning, problem solving, and application of mathematics concepts in real life. Researchers have studied the role that students' motivation, self-efficacy, learning approaches, teachers, and learning environment play in contributing to mathematics achievement. According to You et al. (2021), there is a relationship between mathematics achievement and students' interest in Mathematics, motivation, self-efficacy, mathematics anxiety, self-concept, and time spent studying mathematics outside school.

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Mathematics is very important in the lives of humans and acts as a great tool in helping solve problems in different areas of studies (Olaji & Adeoye, 2022). Apart from being very useful, mathematics can be an interesting and fun discipline which stimulates thinking of learners to learn more and gain satisfaction in finding solutions. As learners get to understand mathematics and find more, they will tend to be interested in learning more about mathematical concepts outside school. Mathematics is learned in schools because it instills skills that are necessary for life, social and cultural interaction, and in different fields of practice. The practical aspect of mathematics makes it very important in the learning process at all levels of education depending on the capabilities of the learners. However, despite the importance of mathematics in education, many learners find it difficult to learn mathematics as indicated in the problems they face in understanding it and performing satisfactorily.

The fundamental reason in this study the researcher proposed was to assess the degree of readiness for self-directed learning among students particularly in their academic performance in mathematics. Readiness in learning plays a vital role for students especially for challenging subjects like mathematics. The researcher sought to monitor and assess the students' self-directed learning readiness and academic performance in mathematics due to identification of students capability for independent learning and take personal responsibility and ownership of their learning. In today's world of connected learning, the researcher aimed to study how far the self-directed learning readiness of grade 10 students identifies their learning needs in connection to their academic performance in mathematics.

Statement of the Problem

The researcher sought to assess the readiness for self-directed learning and the academic performance in mathematics of grade 10 students at Arena Blanco National High School.

Specifically, the research sought to answer the following questions:

1. What is the level of the self-directed learning readiness of the respondents in terms of;
   - **1.1** Self-confidence and intelligence
   - **1.2** Self-monitoring and responsibility
   - **1.3** Attitude towards Mathematics learning
2. What is the students academic performance in mathematics?
3. Is there a significant relationship between the level of self-directed learning readiness and students academic performance in mathematics?

Significance of the Study

This study is beneficial to following persons;

For The School Administrator

The results may provide school administrators with useful information for planning programs, activities, or interventions that support students' independent learning and improved mathematical learning outcomes.

For The Mathematics Teachers

The results may provide teachers with information that can help them understand their students' level of self-directed learning readiness and academic performance in mathematics. The findings may also serve as a basis for developing appropriate teaching strategies and learning activities that encourage students to become more independent learners.

For The Students

Through this study, students can gather relevant details on the significance of preparedness for self-directed learning to their academic performance in mathematics. It will encourage the passion of them in terms of learning as an individual to attain for their success in mathematics. This will also encourage the students to practice their critical thinking skills which will motivate them to engage with new learnings.

For The Future Researchers

This study is beneficial for future researchers because it contains significant data regarding readiness for self-directed learning and performance in mathematics. Future researchers who will conduct a similar study on this can use it to serve as a basis or theory for their research. The outcome of the study leads as a chief source and instrument to connect with other research problems that are related to this title.

Objectives of the Study

The researcher sought to assess the readiness for self-directed learning and the academic performance in mathematics of grade 10 students at Arena Blanco National High School.

METHODS

Research Design

The research design was used in this study is quantitative correlational research design. According to Wilson & Joye (2016), Correlation design is a form of research in which the research looks at the strength of the relationship (positive or negative) between two or more variables.

In order to give and investigate systematic information and analysis about a phenomenon through the collecting of quantifiable data and the use of statistical methods, this research utilized a quantitative-correlational approach to its design. By employing these approach, the study assessed the respondents' readiness for self-directed learning and their academic performance in mathematics. Quantitative-correlational research design which entails observing statistical connection between two factors and exploration of the correlation between the variables, which includes Self-directed Learning Readiness and Academic Performance in Mathematics.

Research Locale

This study was centered at Arena Blanco National High School, with a specific focus on grade 10 students enrolled in the academic year 2026-2027. The campus is located along Bench Drive, Arena Blanco, Zamboanga City. The research was

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conducted exclusively in the school premises, ensuring accessibility and participation from the identified student cohort.

Population and Sampling

Convenience sampling were employed in this study as a non-probability sampling technique. The respondents were selected based on their accessibility, availability, and willingness to participate in the study. The participants were consist of Grade 10 students of Arena Blanco National High School who are officially enrolled during the academic year 2026-2027 of the study. This sampling method were utilized to facilitate the efficient collection of data from respondents who were readily accessible to the researcher and were meet the established criteria for participation.

Data Gathering Procedure

Before the study was conducted, a letter of permission was submitted to the Principal of Arena Blanco National High School (ABNHS) to seek approval to conduct the research among Grade 10 students. After obtaining approval, convenience sampling was employed to select the respondents based on their accessibility, availability, and willingness to participate in the study. The researchers ensured that the selection of respondents was conducted in accordance with the objectives of the study and the school's guidelines.

The study was conducted through a face-to-face survey questionnaire. Before answering the questionnaire, the respondents were informed about the research title, purpose, and objectives of the study. An informed consent form was also provided to ensure that the respondents understood the nature of their participation. The researcher explained that participation was voluntary and that the information gathered would be treated with strict confidentiality. All information collected from the respondents was handled responsibly to protect their identities and privacy in accordance with applicable data privacy laws.

After data collection, all gathered data were securely stored in a protected storage system with appropriate security measures to prevent unauthorized access, disclosure, loss, or misuse of confidential information. Access to the stored data was restricted to the researchers to maintain the security and confidentiality of the information. The researchers did not disclose the names or personal information of the respondents in the presentation of the findings. All information collected throughout the study was kept private and confidential and was used solely for research purposes.

After the data had been collected, the responses were organized, tabulated, and submitted to a statistician for appropriate statistical analysis. The results were then interpreted to address the research objectives and answer the research questions. Based on the findings, conclusions were formulated in accordance with the results of the statistical analysis. Finally, after the completion of the study and in accordance with applicable data retention requirements, all research data were scheduled for secure deletion or destruction to protect the privacy and confidentiality of the respondents.

Research Instrument

This study utilized an adapted research questionnaire that was prepared by Nicole A. Calimag and Januard D. Dagdag, the survey questionnaire consists of two parts. Part 1 comprised the demographic characteristics or student profile, while part 2 included the assessment of self-directed learning preparedness employing the Likert Scale.

The respondents answered the questionnaire through a survey questionnaire process. The set of questions in the questionnaire had 2 sets. Demographic profiles were asked the respondents on the first part of the questionnaire about their personal identification which includes their name (required), grade level, sex, age and grade in mathematics (First Grading). In the second section, a Likert scale applied to the Questionnaire in this research, where students will rate the provided scenarios using: 5-Strongly Agree (SA), 4-Agree (A), 3-Moderateiy Agree(MA), 2-Disagree (D), and 1-Strongly Disagree (SD). The evaluation utilized is the level of readiness for self-directed learning of the students regarding; self-confidence and intelligence, self-monitoring and responsibility, and attitude towards mathematics learning.

Data Analysis

The following statistical tools were used in the employed in the analysis and treatment of the data collected are as follows:

Weighted mean were used to determine the level of the self-directed learning readiness of the respondents.

Mean, frequency count, and percentage were utilized to assess the academic performance in mathematics of the students.

The Pearson-product moment correlation was employed to evaluate the significant relationship between the level of self-directed learning readiness and students' academic performance in mathematics.

Validity and Reliability of the Instrument

This study utilized a standardized questionnaire that was prepared by Nicole A. Calimag and Januard D. Dagdag (2023) the survey questionnaire consists of two parts. Part 1 was the demographic profile or student profile and part 2 was the statement on the self-directed learning readiness using Likert Scale. The researchers approached panel expert to confirm the questionnaire by providing them with a copy for assessment. Since the data gathering tool is a standardized one, it will not be subjected to a validation and reliability test. The Cronbach alpha value of 0.954 which connotes that the questionnaire is reliable for the distribution.

RESULT AND DISCUSSION

This chapter presents the results, analysis, interpretation and discussion of the data gathered from the survey conducted online using the standardized and validated questionnaires. The data is presented in the order that it appears in the statement of the problem. The following tables answer the question of the research problem that answer the main problem.

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Table 1
The demographic profiles of the respondents in terms of age

AGE	f	%
14 and below	1	2.0
15 – 16 years old	44	88.0
17 and above	5	10.0
TOTAL	50	100.0

Table 1 shows the demographic characteristics of the participants classified by age. Among the 50 participants surveyed, the age group 15-16 years old had the highest representation, comprising 44 individuals, that represents 88 percent of all respondents. Next is the age category of 17 years old and above, which included 5 respondents, making up 10 percent of the sample. The age group with the lowest frequency was 14 years old and below, with only 1 respondent, accounting for 2 percent of the total sample. Collectively, these figures encompass all 50 respondents, ensuring a comprehensive demographic profile based on age.

Table 2
The demographic profiles of the respondents in terms of sex

SEX	f	%
Male	12	24.0
Female	38	76.0
TOTAL	50	100.0

Table 2 shows the demographic characteristics of the participants classified by sex. According to the data presented, the majority of respondents identified as female, comprising 38 individuals or 76 percent of the total sample. In contrast, 12 respondents identified as male, making up 24 percent of the total. This indicates that female respondents greatly outnumbered male respondents by 26 respondents. Thus, the table accounts for a total of 50 respondents, providing a comprehensive overview of the sex distribution within the surveyed population.

The first problem that this study sought to answer is: What is the level of the Self-Directed Learning Readiness of the respondents in terms of; self-confidence and intelligence, self-monitoring and responsibility an attitude towards mathematics learning

Table 3
The level of the self-directed learning readiness of the respondents in terms of Self-confidence and intelligence

Self-confidence and intelligence	Mean Response	Remarks	Interpretation
1. I am confident working on math homework.	2.94	Moderately Agree	Average
2. I feel confident enough to ask questions in my math class.	2.94	Moderately Agree	Average
3. Working on math homework is not stressful for me.	2.64	Moderately Agree	Average
4. I believe I am the kind of person who is good at mathematics.	2.48	Disagree	Low
5. I believe I can think like a mathematician.	2.16	Disagree	Low
6. I have a deep understanding about math concepts.	2.58	Moderately Agree	Average
7. I feel confident when I work on math tasks.	2.76	Moderately Agree	Average
8. I think logically when I study math.	2.74	Moderately Agree	Average
9. I can clearly explain and present my work on a math task.	2.60	Moderately Agree	Average
10. I have high personal standards in mathematics.	2.52	Moderately Agree	Average
Grand Mean	**2.64**	**Moderately Agree**	**Average**

Legend:
Strongly Disagree = 1.00 – 1.50 = Very Low
Disagree = 1.51 – 2.50 = Low
Moderately Agree = 2.51 – 3.50 = Average
Agree = 3.51 – 4.50 = High
Strongly Agree = 4.51 – 5.00 = Very High

Table 3 presents the degree of self-directed learning readiness among the respondents concerning their self-confidence and intelligence

The data shows that the respondents agree with moderately agree remarks on the question. The Highest indicator are, they were confident working on math homework (2.94); and were feel confident enough to ask questions in my math class (2.94); and the lowest indicator is, they were believe they can think like a mathematician (2.16). It implies that self-confidence and intelligence gives students an average control over their self-directed learning readiness.

Table 3 shows that the respondents had a grand mean of 2.64 which described the respondents self-confidence and intelligence ranging at the average level. It means that the student's understanding of their own mathematics learning capabilities is at an average level.

Findings also indicated that there were participants who demonstrated moderately agree but not totally balance disagree rather it is balance to agree due to the two resulted low and eight average on the table above that math is not dull and boring. This indicates that many of the participants possess strong self-confidence and a positive outlook on mathematics, as they think it will assist them in their future professions. This suggests that a positive approach to mathematics can foster self-assurance in students. The pleasure of the respondents in studying mathematics and their preference for conducting mathematical

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experiments demonstrated students' eagerness to engage in mathematics lessons.

The research by Van der Bergh (2013) suggests that students with strong self-confidence trust in their capabilities to succeed in learning mathematics, enabling them to conquer the fear of failure. These students are prepared to face mathematical challenges, which subsequently boost their academic success; conversely, students with low self-esteem lack belief in their abilities and are more likely to shy away from mathematical challenges (Adelson & McCoach, 2011).

Table 4

The level of the self-directed learning readiness of the respondents in terms of Self-monitoring and responsibility

Self-monitoring and responsibility	Mean Response	Remarks	Interpretation
1. I evaluate myself about things I do in math.	2.98	Moderately Agree	Average
2. I evaluate my own learning in math by trying to solve other examples.	3.28	Moderately Agree	Average
3. I know what I want to achieve in learning from my math subject.	3.28	Moderately Agree	Average
4. I reflect on what I have learned during our math class.	3.34	Moderately Agree	Average
5. I understand what my instructor says during our math class.	3.08	Moderately Agree	Average
6. I focus on the lesson being discussed in math class.	3.56	Agree	High
7. I find time to study the learning materials in my math subject.	3.04	Moderately Agree	Average
8. I monitor my own learning progress in math.	3.08	Moderately Agree	Average
9. I set specific time for my study in math.	3.10	Moderately Agree	Average
10. I am responsible for my own decisions and actions in math.	3.20	Moderately Agree	Average
Grand Mean	**3.19**	**Moderately Agree**	**Average**

Legend:
Strongly Disagree = 1.00 – 1.50 = Very Low
Disagree = 1.51 – 2.50 = Low
Moderately Agree = 2.51 – 3.50 = Average
Agree = 3.51 – 4.50 = High
Strongly Agree = 4.51 – 5.00 = Very High

Table 4 shows the level of self-directed learning readiness of the respondents in terms of self-monitoring and responsibility.

The data shows that the respondents agree with high remarks on the question. The highest indicator is, they were focus on the lesson being discussed in math class (3.56); and the lowest indicator is, they evaluate themselves about the things they do in math (2.98). It implies that self-monitoring and responsibility gives students an average control over their self-directed learning readiness.

Table 4 shows that the respondents had a grand mean of 3.19 which described that the respondents self-monitoring and responsibility ranging at the average level. It means that the respondents' level of how students prepared to engage in monitoring their own advancement in math studies is at an average level.

The results, suggest that the participants demonstrate a moderately strong readiness for self-directed learning regarding self-monitoring and accountability. This suggests that the grade 10 students of Arena Blanco National High School are generally active and responsive in their learning process, particularly in mathematics. They demonstrate the average level of ability to take ownership of their learning through behaviors such as evaluating their own progress, managing their study time, focusing during lessons, and reflecting on their learning experiences. This level of readiness implies that these students are prepared, ready, and capable to thrive in learner-centered environments, where autonomy and self-regulation are crucial. It also indicates that incorporating strategies that promote independent learning such as problem-base learning, flipped classrooms, or self-paced modules may be particularly effective for them. Furthermore, it underscores the importance of educators reinforcing these skills through structured guidance and supportive feedback to further enhance academic performance in mathematics and overall academic success.

Cooper et al. (2020) state that these advantages encompass the idea that various students can acquire these abilities, that mastering a few skills like self-monitoring can positively impact diverse behaviors, and that giving responsibility to students facilitates the reinforcement of constructive actions that adults might overlook.

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Table 5

The level of the self-directed learning readiness of the respondents in terms of Attitude towards Mathematics learning

Attitude towards Mathematics learning	Mean Response	Remarks	Interpretation
1. I want to do better in math when I see kids who excel in math.	3.90	Agree	High
2. I want to improve my mathematical intelligence.	4.40	Agree	High
3. I want to do better in math when I see adults who do well in math.	4.16	Agree	High
4. I want to improve my grade in math.	4.42	Agree	High
5. I want to improve my mathematical skills.	4.34	Agree	High
6. I want to learn how to use math in real-life effectively.	4.18	Agree	High
7. I want to study math because I want to participate in our activities.	3.84	Agree	High
8. I want to continue learning math for as long as possible.	3.80	Agree	High
9. I want to find more than one solution to a math problem.	3.54	Agree	High
10. I think about what I should study to learn more about math.	3.82	Agree	High
Grand Mean	**4.04**	**Agree**	**High**

Legend: Strongly Disagree = 1.00 – 1.50 = Very Low
Disagree = 1.51 – 2.50 = Low
Moderately Agree = 2.51 – 3.50 = Average
Agree = 3.51 – 4.50 = High
Strongly Agree = 4.51 – 5.00 = Very High

Table 5 shows the level of self-directed learning readiness of the respondents in terms of attitude towards mathematics learning.

The data shows that the respondents agree with high remarks on the question. The highest indicator is, they were want to improve their mathematical skills (4.42); and the lowest indicator is, they were want to find more than one solution to a math problem (3.54). It implies that Attitude towards Mathematics gives students a full high control over their self-directed learning readiness.

Table 5 shows that the respondents had a grand mean of 4.04 which described the respondents' Attitude towards Mathematics learning ranging at the high level. It means that the respondents' level of readiness and preparedness for independent learning is at a high level.

Results also revealed that the respondents demonstrate a strong positive attitude toward mathematics learning, reflecting a high level of motivation, interest, and personal goal-setting in math. This positive attitude significantly contributes to their self-directed learning readiness, suggesting that students are not only willing but also eager to take charge of their own learning process. Their desire to improve, seek real-life applications, and pursue long-term engagement with math highlights a strong foundation for successful independent learning and academic growth.

The group of students who enjoyed mathematics, had high expectations for their success in the subject, recognized the importance of mathematics, and believed that learning mathematics was more significant than other subjects generally devoted a significant amount of time and effort to studying it. As a result, their efforts in learning mathematics led to significant success in the field (Chouinard et al., 2007; Guo et al., 2015).

Table 6

Summary table of the level of the self-directed learning readiness of the the respondents

Variables	Grand Mean Response	Remarks	Interpretation
Self-confidence and intelligence	2.64	Moderately Agree	Average
Self-monitoring and responsibility	3.19	Moderately Agree	Average
Attitude towards Mathematics learning	4.04	Agree	High
Overall Mean	**3.29**	**Moderately Agree**	**Average**

Legend: Strongly Disagree = 1.00 – 1.50 = Very Low
Disagree = 1.51 – 2.50 = Low
Moderately Agree = 2.51 – 3.50 = Average
Agree = 3.51 – 4.50 = High
Strongly Agree = 4.51 – 5.00 = Very High

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Table 6 shows the grand mean of each level of the self-directed Learning Readiness. In which, the first is self-confidence and intelligence that has obtained a grand mean of (2.64) with a remarks of average. The second, is self-monitoring and responsibility that has obtained a grand mean of (3.19) with remarks of average. The third, is an attitude towards mathematics learning that has obtained a grand mean of (4.04) with a remark of high. To summarize, the average value of the degree of the overall grand mean for self-directed learning readiness was (3.29). This suggests that the degree of readiness for self-directed learning of the participants regarding; attitude towards learning mathematics received high praise.

The second problem that this study sought to answer is: What is the academic performance in mathematics of the respondent?

Table 7
Academic Performance in Mathematics of the Respondents
(N = 50)

Grade	Verbal Description	f	%	Mean	SD	Lowest Grade	Highest Grade
95-100	Outstanding	0	0	82.04	3.4756	77.0	91.0
90-94	Very Satisfactory	1	2.0				
85-89	Satisfactory	10	20.0				
80-84	Fairly Satisfactory	27	54.0				
75-79	Unsatisfactory	12	24.0				
TOTAL		**50**	**100.0**				

Thus, the second question sought to answer, what is the academic performance in mathematics of the respondents? Table 7 shows that of 50 respondents there were zero (0) respondents whose Academic Performance in Mathematics is ranging between 95 and 100 with a percentage of 0 percent. There were also one (1) respondents whose Academic Performance in Mathematics is ranging between 90 and 94 with a percentage of 2.0 percent which is described as Very Satisfactory. There were also ten (10) respondents whose Academic Performance in Mathematics is ranging between 85 and 90 with a percentage of 20.0 percent which is described as Satisfactory. There were also twenty seven (27) respondents whose Academic Performance in Mathematics is ranging between 80 and 84 with a percentage of 54.0 percent which is described as Fairly Satisfactory. There were also twelve (12) respondents whose Academic Performance in Mathematics is ranging 75 and 79 with a percentage of 24.0 percent which was characterized as Unsatisfactory.

Gundaya (2023), in her research paper titled "Factors Affecting Learners' Performance in General Mathematics at PHINMA-COC," examined the math performance of senior high school students at PHINMA-Cagayan de Oro College for the academic year 2022-2023. He investigated the factors affecting the performance of students in their general mathematics subject and provides an essential background for further studies related to mathematics performance of Filipino learners. This information is particularly relevant to the present study because it shows that the grade distribution provided in Table 7 shows that there are various levels of performance achieved by the students, with majority of them classified as Fairly Satisfactory. This is similar to the study of Tobias and Diego (2022), entitled "Factors Predicting the Mathematics Performance of Grade 8 Students in the New Normal," in which the average mathematics performance of grade 8 students in the Philippines is found to be 79.77. This shows that the mathematics performance of the students was found to be "Fairly Satisfactory." It is relevant to the present study since it can be seen from the results that the achievement of the students in terms of their mathematical skills is still in the moderate range of performance.

The third problem that this study sought to answer is: Is there a significant relationship between the level of self-directed learning readiness and students' academic performance in mathematics?

Table 8
Significant Relationship in the Level of Self-directed Learning Readiness and Academic Performance in Mathematics of the Respondents

x-variable	y-variable	r-value	Verbal Description	p-value	Interpretation	Decision on Ho
Self-confidence and intelligence	Academic Performance	0.371	Low positive Correlation	0.008	Significant	Reject Ho
Self-monitoring and responsibility	Academic Performance	0.160	Negligible Correlation	0.267	Not Significant	Failed to Reject Ho
Attitude towards Mathematics learning	Academic Performance	0.267	Negligible Correlation	0.646	Not Significant	Failed to Reject Ho

Table 8 illustrates the significant relationship between self-directed learning readiness and the respondents' academic performance in mathematics. The data above presents the calculated r-value and p-value for the three sub-variables of the independent variable, including self-confidence and intelligence,

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self-monitoring and responsibility, and attitude toward learning mathematics.

The results in Table 8 show the relationship between the three different variables of self-directed learning readiness and students' academic performance in mathematics. The findings reveal that self-confidence and intelligence have a low positive correlation with academic performance ($r = 0.371$, $p = 0.008$), indicating a significant relationship between the two variables. Since the p-value is less than 0.05, the null hypothesis is rejected. This suggests that students with greater self-confidence and perceived intelligence tend to have better academic performance in mathematics. In other words, it might be assumed that those students who have confidence in their skills and abilities and think that they are able to perform well in the field of mathematics might achieve better academic results. The results obtained can be explained with the help of the scoping review done by Street et al. (2024). This review discussed the concept of mathematics self-efficacy and its connection with the learning behavior and academic performance of students. Another characteristic of learners which influences academic achievements in mathematics was also defined by Breit et al. (2025). These researchers studied the role of intelligence, mathematical self-concept, self-regulation, and metacognition in mathematics achievement.

Meanwhile, self-monitoring and responsibility have a correlation coefficient of 0.160 and a p-value of 0.267, indicating a negligible and statistically insignificant relationship. Similarly, attitude toward mathematics learning has a reported correlation coefficient of 0.267 and a p-value of 0.646, which is also interpreted as statistically insignificant. This means that in this current research, there was no significant relationship between students' self-monitoring and taking responsibility on their academic work and their mathematics performance. However, according to Breit et al. (2025), self-regulation and metacognition were some of the learner characteristics that mattered in mathematics performance. Self-regulation and metacognition assist students in planning and evaluating their learning. Therefore, the null hypothesis is not rejected for self-monitoring and responsibility and attitude toward mathematics learning.

The findings imply that self-confidence and students' perceptions of their intelligence may play an important role in their academic performance in mathematics. Students who believe in their abilities may be more willing to participate in mathematical activities, solve challenging problems, and persevere when faced with difficulties. Therefore, mathematics teachers should encourage students to develop confidence through positive feedback, supportive classroom environments, and learning activities that promote success. However, since self-monitoring and responsibility, as well as attitude toward mathematics learning, do not show statistically significant relationships with academic performance in this study, these factors alone may not sufficiently explain differences in students' mathematics achievement. Teachers should continue to promote independent learning, self-assessment, responsibility, and positive attitudes while also considering other factors that may influence academic performance, such as teaching strategies, study habits, motivation, and learning resources.

Based on the findings, the study concludes that among the three variables of self-directed learning readiness, only self-confidence and intelligence have a statistically significant relationship with students' academic performance in mathematics. In contrast, self-monitoring and responsibility, as well as attitude toward mathematics learning, do not have statistically significant relationships with academic performance based on the reported p-values. These results suggest that students' confidence in their abilities may be an important factor associated with mathematics achievement. However, the findings do not establish that self-confidence directly causes better academic performance. Overall, the results indicate that the relationship between self-directed learning readiness and academic performance varies across its dimensions. Further research may examine additional factors to gain a more comprehensive understanding of students' mathematics performance.

In general, the results demonstrate that not all dimensions of self-directed learning readiness significantly correlate with the academic achievement of the students in mathematics. Among the examined dimensions, self-confidence and intelligence turned out to be the only two dimensions that showed a significant connection, being positively correlated. In addition, it shows how crucial it is to develop confidence in the students in the process of learning mathematics since there are many other factors influencing the academic achievement of the students. Thus, it is important for teachers to organize the learning process in such a way that will make the students feel confident and develop their skills in mathematics.

CONCLUSION

The investigator aimed to determine the self-directed learning readiness and students' academic performance in mathematics among grade 10 students of Arena Blanco National High School. Based on the data gathered of the study, following conclusion are the following: 1) The level of the Self-Directed Learning Readiness of the respondents in terms of Self-Confidence and Intelligence is average, Self-Monitoring and Responsibility is average and Attitude towards Mathematics Learning is high. 2) The mathematics performance of the respondents is satisfactory. 4) There is a significant relationship in the level of self-directed learning readiness and academic performance in mathematics of the respondents in terms of Self-Confidence and Intelligence. There is no significant relationship in the level of self-directed learning readiness and academic performance in mathematics of the respondents in terms of Self-Monitoring and Responsibility and Attitude towards Mathematics Learning.

Recommendation

Based on the data gathered, the researchers would like to offer and make the following recommendations: To faculty their must be continue to motivate their students of math classes to boost the confidence of the students on math and encourage them to practice self-directed learning by engaging them into several

ISSN (Online): 2455-3662
EPRA International Journal of Multidisciplinary Research (IJMR) - Peer Reviewed Journal
Volume: 12| Issue: 11| November 2026|| Journal DOI: 10.36713/epra2013 || SJIF Impact Factor 2026: 8.753 || ISI Value: 1.188

mathematical learning activities and integrate multiple teaching strategies. To students should attend webinar or any activities that related to mathematics that boost their confidence on it. Furthermore, the students must continue to practice their individual learning strategies to enhance and develop their self-directed learning readiness. To future researcher who will conduct the similar study and contribute for a better and deeper understanding of the self-directed learning readiness and mathematics performance. This study encourages them to use this as evidence-based that contribute to their study and also as a support for the students development on their studies.

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