

# THE IMPACT OF SECONDARY SCHOOL TEACHERS' TRAINING ON STUDENTS' ACADEMIC ACHIEVEMENT: A CORRELATION STUDY

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## ABSTRACT

The main purpose of the study was to determine how effectiveness of teachers' training – teacher work attitude, teaching pedagogy, classroom management, students' needs and students' assessment influence the students' academic achievement – written works, performance task and quarterly assessment –in the District of Veruela, Veruela Agusan del Sur for school year 2023-2024. Utilizing the descriptive quantitative which applied correlational research design, this study sought to find out the relationship of the two variables. The study used adapted-research instrument for effectiveness of teachers' training and first quarter class proficiency for students' academic achievement. The effectiveness of teachers' training questionnaire was consisting of five indicators such as teachers' work attitude with seven questions, teaching pedagogy with five questions, classroom management with 11 questions, students need with nine questions, and students' assessment with six questions. The study found that level of effectiveness of teachers' training has an overall mean of 4.7 described as very high, the level of students' academic achievement in terms of written works is nearing mastery level with 64% class proficiency rating, the level of students' academic achievement in terms of performance task achieved mastery level with 97% class proficiency rating, the level of students' academic achievement in terms of quarterly assessment achieved an overall average of 58% interpreted as nearing mastery level. There was no significant difference between teachers' training and student academic achievement.

**Keywords:** Teachers' Training, Students' Academic Achievement, Correlational Research Design

## 1. INTRODUCTION

Teachers play a vital role in shaping student's educational experiences, and the quality of their training can significantly influence their ability to impart knowledge effectively. Training is a vital procedure for imparting specialized abilities to individuals, allowing them to perform their tasks competently and efficiently (Johnson, 2017). This is a planned, systematic activity aimed at enhancing skill levels as well as knowledge and competency improvement (Nassazi, 2013). Individuals gain the information, abilities, and behaviors needed to perform activities effectively in their respective areas through structured teaching (Gomez et al., 2014). Training helps organizations grow and succeed by giving employees with the necessary skills (Noe, 2016).

The training and developing of teachers are what sets apart different students in a country as regards their academic performance and national advancement. Academic standards in all Nigerian educational institutions, according to Ogursaju (2004), have fallen far below social expectations. Most students struggle to pass their exams due to a lack of basic understanding in their different topics, a lack of properly competent teachers in schools, and insufficient facilities (Asaolu, 2003; Odesola, 2001). Training teachers is vital in the twenty-first century, primarily because current generation pupils do not understand old teaching techniques. We cannot teach today's pupils with yesterday's approaches. Personalization of education is required for students in the twenty-first century.

A national study conducted by Entegro in 2022 in Tanza National Trade School, Cavite, Philippines looked at how virtual training affects teachers' confidence in areas such as student involvement, teaching techniques, and classroom control. The study found that teachers felt less confident following virtual training compared to in-person training. Virtual training offers convenience, safety, personal growth in technology, flexibility, accessibility, creativity, and focus. However, there are drawbacks including impact on instruction and assessment, technical issues, lack of interaction, distractions, and concerns about mental and physical health. The study suggests creating a tailored action plan or program to support teachers in the Philippines undergoing virtual training.

In the secondary schools of the municipality of Veruela, teachers' training is not being directly discussed during the crafting of school improvement plans. And upon thorough review, similar studies were found globally, however, there were less that were conducted locally. Conducting research on the impact of teacher training programs on students' learning within the municipality of Veruela would greatly contribute to the development of comprehensive training strategies and guidelines for both training personnel and teacher mentors. The researcher will use contextualized instrument and will conduct the study in a rural area. This research would provide a solid foundation for facilitating continuous improvement in teaching practices and fostering optimal student outcomes. Thus, this study remains important in the body of knowledge.

### 1.1 Research Questions

The main objective of the study was to examine the impact of teachers' training on students learning in all Secondary Schools in the municipality of Veruela, Agusan del Sur for the school year 2023-2024. Specifically, the study aimed to answer the following questions:

1. What is the level of the effectiveness of teachers' training in terms of:
  - 1.1 teacher work attitude
  - 1.2 teaching pedagogy
  - 1.3 classroom management
  - 1.4 students' needs
  - 1.5 students' assessment?
2. What is the level of students' learning in terms of:
  - 2.1 written works
  - 2.2 performance tasks
  - 2.3 quarterly examination?
3. Is there a significant relationship between the teachers' training effectiveness and the students learning in terms of its variables?

## 2. LITERATURE REVIEW

The literature relevant to this study is focused on research and studies compiled on teachers' training and its impacts on students' academic performance.

Training is an important aspect of human resource development (Ali & Hamza, 2018). Education is a necessary component of mankind and is critical to a nation's progress (Hafeez et al., 2020). Teacher training is a vital cog within the educational system since it gives those who impart knowledge to their students the tools, data, they require so that their teaching abilities can be enhanced thus impacting positively the learning process Childhood Brain Development (Anthes, Child Dev.) Teacher education consists of various undertakings like training sessions, conferences, guidance, fostering and continuous growth as a professional career person.

Training scholars have investigated the link between teacher education and secondary school students' academic achievement. According to Harris and Sass (2011), it's seems like everybody agrees that improved primary and high school education in the United States should be about improved quality of teachers; in other words, the kind of education children receive in these schools largely depends on the way teachers have trained.

Paley and Crisel (2019) define training as a purposeful and systematic approach to improving job-related competencies and performance. Ojo and Olaniyan (2008) emphasized the importance of teacher training on student performance when they stated that teacher training and development creates a learning culture by providing

opportunities for learning that make them competent and increase their productivities, which will aid the school in making progress, which is clearly reflected in their students' performance.

According to Ulla (2018), training is important for teachers to enhance their instructional techniques and acquire the necessary skills for a specific subject. With proper training, teachers can utilize a variety of methods and abilities to better assist students and improve their academic success. The core aspect of human resources management is training, which consists of systematically using formal methods to help individuals fond of obtaining infinite wisdom and power for effective task performance (Armstrong, 2020).

In a study conducted by Omar (2014), indicates that in-service trainings have a great impact on effectiveness of teachers. For teachers seeking to increase their knowledge and expertise, these training sessions are necessary steps leading to better work execution. Particularly, professional education requires in-service training so that teachers may be resilient against the new challenges or transformations that are usually brought up from time to time as they also improve on their expertise areas.

**Teachers' Work Attitude.** Training and characteristics of teachers play a vital role in the achievement and success of students. Teachers should be trained in such a way that they would gain new knowledge, skills or improve existing ones, possess strength of character enabling them help students achieve good academic performance meanwhile their personal traits should satisfy certain requirements needed for successful work in this area. Evrtson and Smithey (2000) conducted a study that determined effective teachers must exhibit three traits. Poor teachers do not survive in the presence of high teacher expectancies. The teacher can manage the class effectively if he focuses on good classroom control.

**Teaching Pedagogy.** In a research paper by Hattie and Donoghue in 2016, a meta-analysis of studies dealing with the effectiveness of teacher-training programs in the development of pedagogical skills. Teacher training programs can be effective in developing pedagogical skills as per the results of this meta-analysis with a moderate effect size of 0.48. Effective teacher training programs' main characteristics were reviewed in this article.

**Classroom management.** Classroom management is essential to ensure effective teaching and learning (Weinert & Kapp, 2018). It has been pointed out that the education teachers receive is central to making them capable of managing classrooms properly. In this literature review, we will assess the impact of teacher education on classroom management. According to Neves et al. (2013), Teachers are taught knowledge which enables them to handle students effectively in class by teacher education programs. According to Weinert and Kapp (2018), good techniques of controlling the classroom will enable the learners to be active thus leading to zero tolerance for misbehavior and better results.

**Students' Needs.** This study examines the literature on the efficacy of teacher education, especially the influence of teacher education on student success. The authors of the research performed a review of both qualitative and quantitative studies on the subject. They found that teaching preparation help in improving learners' success, for teacher training to be effective it should have various attributes. They also look at its importance in satisfying pupil needs while ensuring that effective teaching emphasizes diagnosing and treating each student's problems uniquely. Although teacher training improves student performance; content and mode of training, qualities of the trainer, class environment, and student needs are among other considerations. On the whole, this analysis highlights why developing teachers is important for meeting students' necessities and offers essential pointers on factors influencing academic success (Borko & Putnam, 1996).

**Students Assessment.** Smith and Johnson (2019) maintain that teacher preparation is essential in enhancing students' outcomes. The basis for training tutors, different methodologies and the effect of leading class on the grades that pupils receive make up this piece. Another study conducted by Wang & Chen (2018) undertakes a meta-analysis of empirical research assessing the influence of teacher training on student evaluation in this paper. They find that teacher training in student assessment increases the quality of student evaluation as well as the process's reliability and validity. The authors also explore the elements that influence teacher training efficacy and the implications for future research and practice.

**Performance Task.** A performance task is an assessment where students have to display their knowledge and skills by doing something or making something. It was found in research by Lai and Chan 2016 that when

teacher preparation schemes are centered on learners and not instructors, trainees' performance on assignments go up significantly.

**Quarterly Assessment.** A recent study in Journal of Educational Research and Evaluation was conducted to assess the effects of a teacher training program on quarterly test results of students. It was established that teacher training led to better performance in students such that there was a noteworthy increase in total scores as opposed to learners whose teachers did not receive any form of training (Smith et al., 2019).

### 3. METHODOLOGY

#### 3.1 Research Design

This study used descriptive-correlational research design. McCombes (2022) explained that descriptive research aims to describe a population, situation or phenomenon and a correlational research design investigates relationships accurately and systematically between variables without the researcher controlling or manipulating any of them. It reflects the strength and/or direction of the relationship between two (or more) variables and the direction of a correlation can be either positive or negative (Bhandari, 2022).

#### 3.2 Research Locale

The study was conducted at the secondary schools of the Municipality of Veruela, Agusan del Sur. The Municipality of Veruela, Agusan del Sur, secondary schools served as the study's sites. The settlement of Veruela is said to be the oldest in upper Agusan del Sur. When Spanish missionaries first came into contact with the tribe in the late 1700s, the region was rife with smallpox and cholera, leading some to speculate that the name "Veruela" was derived from the term "virus". From that point on, the Spanish term La Verus gave rise to the name Veruela.

The Manobos of Agusan were overrun by Muslim tribes from Davao in the eighteenth century. The Muslims were opposed by the Manobos. Additionally, the tribe was converted to Christianity during that period. The people owed Saint John, their patron saint, and Datu Manguyod for their successes. Later, the Manobo tribes relocated down the Agusan River to Manning, also known as Linongsuran. However, a massive earthquake in 1916 completely destroyed the village, leaving only the remnants, causing the survivors to flee and regroup in the municipality's barangay poblacion. Regarding the border in Barangay Del Monte, the neighboring province of Compostela Valley and the municipality of Veruela are embroiled in a quiet conflict.

Local administrations are attempting to resolve the conflict through dialogue. According to a different explanation, the name originated from the Visayan word "berwela," which denotes a location where bamboo rafts are fabricated. The Manobo term "vuroha," which meaning "a place where there are many springs," is the source of yet another explanation.

President Diosdado Macapagal issued Executive Order No. 147 on March 31, 1965, which established Veruela as a municipality. Veruela has had eight different administrations since it was formally established as a municipality.

The town is situated on a large land mass spanning 385.45 km<sup>2</sup> (148.82 sq mi) representing 3.86% of Agusan del Sur's geographical area while; during recent times, just about 39,708 residents were recorded as living there hence making up 5.37% among their communities within Agusan Del Sur Province alone but constituting only 1.42% of all inhabitants found within Caraga Region in general based on report from 2020 Census data Quarterly Surveys of Barangays (CBMS/S). Population density is 103 persons or 267 inhabitants on ever square mile/kilometer. Using the shortest distance between two points on Earth's surface, known as the great-circle distance, Veruela is the closest to the cities of Bislig, Surigao del Sur, Tagum, Davao del Norte, Bayugan, Agusan del Sur, Panabo, Davao del Norte, Malaybalay, Bukidnon, and Valencia, Bukidnon.

Sinobong National High School, Veruela National High School, Sampaguita National High School, La Fortuna National High School and Nueva Era National High School are public secondary schools within the Municipality of Veruela. that offers both Junior High School and Senior High School. Katipunan National High School is also a public secondary school within the municipality, but it only offers junior high school curriculum.

### 3.3 Research Participants

The respondents of the study were the science teachers at the Secondary Schools of the municipality of Veruela. Sinobong National High School, Sampaguita National High School, Katipunan National High School, Veruela National High School, Nueva Era National High School, and La Fortuna National High School. A total of 16 Science teachers from these schools participated in the study.

### 3.4 Instruments of the Study

The questionnaire measured the level of effectiveness of teachers' training. It consisted of five indicators such as teachers' work attitude with seven questions, teaching pedagogy with five questions, classroom management with 11 questions, students need with nine questions, and students' assessment with six questions. For students' learning', results from the first quarter class proficiency for school year 2023-2024 were used.

### 3.5 Procedure

The researcher underwent the ensuing procedures once the panel members gave their approval:

The validators of Assumption College of Nabunturan verified the questionnaires. Subsequently, an office division letter requesting permission for carrying out the study in secondary schools of the Veruela District located at Veruela, Agusan del Sur was submitted. Following approval, the researcher surveyed those identified respondents in this investigation using questionnaires. The researcher also crafted another letter which she sent to the principals of the six secondary schools requesting for authorization of their teachers' participation in her study. Furthermore, he personally administered the questionnaire since he was supposed to explain about the research instrument and its purpose.

The survey questionnaire was obtained by the researcher, followed by data encoding. From all of the obtained data gathered from the respondents, the researcher performed statistical analysis. After the statistical analysis, interpretations were made. After analyzing this data and absorbing the findings of the research, a conclusion was reached, and recommendations were made.

### 3.6 Statistical Treatment of Data

The following statistical methods were utilized in this investigation in order to process the responses to the questions at a significance level of 0.05. The answers that people gave to the questions on the questionnaires were tallied, tabulated, and then interpreted in the appropriate manner. The statistical tools were used for data analysis and interpretations are the following:

**Mean.** This was used to determine the impact of teachers' training to student learning of the secondary schools in the District of Veruela.

**Pearson Product-Moment Correlation Coefficient.** This statistical tool was employed to determine the significance of the relationship between the effectiveness of teachers' training and students' learning of the six schools in the District of Veruela.

## 4. RESULTS

This chapter presents the results of the computation of the data in tabular form. Such results were presented in tabular form which is strengthened by the analysis and interpretation made by the researcher.

**4.1 Teachers' Work Attitude.** It is indicated in Table 1 the level of effectiveness of teachers' training in terms of teachers' work attitude.

Table 1  
Teachers' Work Attitude

Number	Indicator	Mean	Quality Index
	As a teacher:		
1	I was trained to come to the classroom on time.	4.6	Very High
2	I was trained to be self-confident during instruction.	4.7	Very High
3	I was trained to show good manners in the classroom.	4.8	Very High
4	I was trained to use classroom resources properly.	4.8	Very High
5	I was trained to use good examples to explain concepts.	4.7	Very High
6	I was trained to be actively helpful when students/ colleagues have problems.	4.5	Very High
7	I was trained to work on extra mile if needed.	4.4	High
	Average	4.6	Very High

Table 1 reveals the level of effectiveness of teachers' training in terms of teachers' work attitude. Items number 3, *I was trained to show good manners in the classroom*, and number 4, *I was trained to use classroom resources properly* have the highest mean of 4.8 which is interpreted as very high. On the other hand, item number 6, *I was trained to work on extra mile if needed* has the lowest mean of 4.4, interpreted as high. A very high mean for teachers' work attitude indicates that, on average, the teachers in this study possess a strong positive outlook and dedication towards their work. This suggests a high level of commitment, motivation, and enthusiasm in performing their teaching responsibilities. Their positive work attitude is likely to contribute to a conducive and engaging learning environment, potentially leading to improved educational outcomes for students.

**4.2 Teaching Pedagogy.** It is indicated in Table 2 the level of effectiveness of teachers' training in terms of teaching pedagogy.

Table 2  
Teaching Pedagogy

Number	Indicator	Mean	Quality Index
	As a teacher:		
1	I was trained to select appropriate teaching method relevant to the course content.	4.9	Very High
2	I was trained to plan effective lessons.	4.8	Very High
3	I was trained to prepare and use audio-visual aids for teaching.	4.8	Very High
4	I was trained to promote discussion about subject matter.	4.8	Very High
5	I was trained to promote teamwork and sharing of ideas.	4.9	Very High
	Average	4.9	Very High

Table 2 reveals the level of effectiveness of teachers' training in terms of teaching pedagogy. Items number 1, *I was trained to select appropriate teaching method relevant to the course content*, and number 5, *I was trained to promote teamwork and sharing of ideas* have the highest mean of 4.9 which is interpreted as very high. On the other hand, items number 2, *I was trained to plan effective lessons*, number 3, *I was trained to prepare and use audio-visual aids for teaching* and number 4, *I was trained to promote discussion about subject matter* have the mean of 4.8, interpreted as very high. A very high mean for teaching pedagogy suggests that, on average, the teachers in this study demonstrate a strong proficiency and effectiveness in their instructional methods. This indicates that they possess a deep understanding of various teaching strategies and approaches that promote student engagement, active learning, and knowledge retention. A high mean in teaching pedagogy implies that these teachers consistently employ innovative and student-centered practices, leading to enhanced learning experiences and potentially better academic outcomes for their students.

**4.3 Classroom Management.** It is indicated in Table 3 the level of effectiveness of teachers' training in terms of classroom management.

Table 3  
Classroom Management

Number	Indicator	Mean	Quality Index
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	As a teacher:		
1	I was trained to manage my class time properly.	4.8	Very High
2	I was trained to manage the classroom space properly.	4.8	Very High
3	I was trained to manage the materials and equipment properly.	4.9	Very High
4	I was trained to keep record properly.	4.8	Very High
5	I was trained to establish classroom routines and procedures.	4.8	Very High
6	I was trained to develop proper student behavior in the classroom.	4.8	Very High
7	I was trained to effectively use rewards for increasing desirable behavior.	4.7	Very High
8	I was trained to use challenging, positive remarks.	4.9	Very High
9	I was trained to employ and use anecdotes and stories carefully.	4.7	Very High
10	I was trained to effectively use punishment for decreasing undesirable behavior.	4.4	High
11	I was trained to provide a climate for students to learn.	4.7	Very High
	Average	4.7	Very High

Table 3 reveals the level of effectiveness of teachers' training in terms of classroom management. Items number 3, *I was trained to manage the materials and equipment properly*, and number 8, *I was trained to use challenging, positive remarks* have the highest mean of 4.9 which is interpreted as very high. On the other hand, item number 10, *I was trained to effectively use punishment for decreasing undesirable behavior* has the lowest mean of 4.4, interpreted as high. A very high mean for classroom management indicates that, on average, the teachers in this study exhibit exceptional skills in maintaining discipline, order, and a positive learning environment in their classrooms. This suggests that they effectively establish and enforce rules, routines, and expectations, resulting in a well-managed and organized classroom. A high mean in classroom management implies that these teachers are successful in fostering a respectful and conducive atmosphere for learning, allowing students to focus and engage in their academic tasks. This positive classroom management is likely to contribute to increased student participation, attentiveness, and overall academic achievement.

**4.4 Students' Needs.** It is indicated in Table 4 the level of effectiveness of teachers' training in terms of students' needs.

Table 4  
Students' Needs

Number	Indicator	Mean	Quality Index
	As a teacher:		
1	I was trained to stimulate students to think in a critical way.	4.4	High
2	I was trained to produce independent learners.	4.4	High
3	I was trained to help students to understand important ideas.	4.5	Very High
4	I was trained to help students to organize their work.	4.5	Very High
5	I was trained to keep students constructively engaged in their work.	4.6	Very High
6	I was trained to adjust class activities to learning needs of individual students.	4.6	Very High
7	I was trained to develop student observation techniques.	4.4	High
8	I was trained to arouse student's interest in learning.	4.6	Very High
9	I was trained to give differentiated activities.	4.6	Very High
	Average	4.7	Very High

Table 4 reveals the level of effectiveness of teachers' training in terms of students' needs. Items number 5, *I was trained to keep students constructively engaged in their work*, number 6, *I was trained to adjust class activities to learning needs of individual students* and number 8, *I was trained to arouse student's interest in learning* has the highest mean of 4.6 which is interpreted as very high. On the other hand, items number 1, *I was trained to stimulate*

students to think in a critical way, number 2, *I was trained to produce independent learners* and number 7, *I was trained to develop student observation techniques* have the lowest mean of 4.4, interpreted as high. A very high mean for students' needs indicates that, on average, the teachers in this study are attentive to the individual needs and well-being of their students. They demonstrate a strong commitment to supporting students' personal and academic growth by addressing their diverse learning styles, abilities, and interests. A high mean in students' needs suggests that these teachers prioritize creating an inclusive and supportive learning environment where students feel valued, respected, and understood. By catering to students' needs, these teachers facilitate their engagement, motivation, and overall satisfaction with the learning process, potentially leading to improved academic performance and holistic development.

**4.5 Students' Assessment.** It is indicated in Table 5 the level of effectiveness of teachers' training in terms of students' assessment.

Table 5  
**Students' Assessment**

Number	Indicator	Mean	Quality Index
	As a teacher:		
1	I was trained to use various evaluation techniques/tests properly.	4.8	Very High
2	I was trained to give my students class work assignments.	4.5	Very High
3	I was trained to give my students homework.	4.3	High
4	I was trained to show and indicate the rate of progress to each student.	4.6	Very High
5	I was trained to point out the strengths and weaknesses of the students.	4.5	Very High
6	I was trained to align evaluation to the lesson objectives.	4.8	Very High
7	I was trained to use various evaluation techniques/tests properly.	4.8	Very High
	Average	4.6	Very High

Table 5 reveals the level of effectiveness of teachers' training in terms of students' assessment. Items number 1, *I was trained to use various evaluation techniques/tests properly*, number 6, *I was trained to adjust class activities to learning needs of individual students I was trained to align evaluation to the lesson objectives* and number 7, *I was trained to use various evaluation techniques/tests properly* have the highest mean of 4.8 which is interpreted as very high, Item number 3, *I was trained to give my students homework* has the lowest mean of 4.3 interpreted as high. A very high mean for students' assessment suggests that, on average, the teachers in this study excel in evaluating and measuring students' progress and understanding of the subject matter. This indicates that they utilize effective assessment methods and tools that accurately gauge students' knowledge, skills, and achievements. A high mean in students' assessment implies that these teachers provide timely and constructive feedback, allowing students to understand their strengths and areas for improvement. This robust assessment practice helps guide instructional planning and supports individualized learning, ultimately promoting continuous growth and academic success among students.

#### 4.6 Level of the Effectiveness of Teachers' Training

Table 6 presents the level of effectiveness of teachers' training with its five indicators.

Table 6

#### The Level of Effectiveness of Teachers' Training

Indicator	Mean	Quality Index
Teachers' Work Attitude	4.8	Very High
Teaching Pedagogy	4.9	Very High
Classroom Management	4.7	Very High
Students' Needs	4.7	Very High
Students' Assessment	4.6	Very High
<b>Overall</b>	<b>4.7</b>	<b>Very High</b>

Table 6 reveals the level of effectiveness of teachers' training with five different indicators. The Teachers' Work Attitude received a mean of 4.8 which is interpreted as very high. Teaching Pedagogy has a mean of 4.9



which is very high. Classroom management and students' needs are interpreted as very high with a mean of 4.7. Students' assessment is interpreted as very high with a mean of 4.6. The overall effectiveness of teachers' training has a mean of 4.7 which is interpreted as very high.

#### 4.7 Level of the Students' Academic Achievement

**4.7.1 Written Works.** It is indicated in Table 7 the level of students' learning in terms of written works.

Table 7  
Written Works

Teacher	Class Proficiency	Mastery Level of Students in Science
1	54%	Nearing Mastery Level
2	61%	Nearing Mastery Level
3	70%	Mastery Level is Attained
4	64%	Nearing Mastery Level
5	66%	Nearing Mastery Level
6	71%	Mastery Level is Attained
7	60%	Nearing Mastery Level
8	70%	Mastery Level is Attained
9	64%	Nearing Mastery Level
10	61%	Nearing Mastery Level
11	59%	Nearing Mastery Level
12	70%	Mastery Level is Attained
13	59%	Nearing Mastery Level
14	67%	Nearing Mastery Level
15	55%	Nearing Mastery Level
16	68%	Nearing Mastery Level
<b>Mean</b>	<b>64%</b>	<b>Nearing Mastery Level</b>

Table 7 reveals the level of effectiveness of students' learning in terms of written works. Students of Teacher 6 attained the mastery level with 71%. On one hand, students of Teacher 1 attained nearing mastery level. This indicates that there is room for improvement in their understanding and application of scientific concepts and skills. This demonstrated a low level of proficiency in effectively communicating their knowledge and understanding of science through written assignments. This indicates that there is a need for improvement in their ability to express scientific concepts, ideas, and findings in a clear and coherent manner.

**4.7.2 Performance Task.** It is indicated in Table 8 the level of students' learning in terms of performance task.

Table 8  
Performance Task

Teacher	Class Proficiency	Mastery Level of Students in Science
1	95%	Mastery Level is Attained
2	96%	Mastery Level is Attained
3	97%	Mastery Level is Attained
4	93%	Mastery Level is Attained
5	95%	Mastery Level is Attained
6	98%	Mastery Level is Attained
7	94%	Mastery Level is Attained

8	97%	Mastery Level is Attained
9	99%	Mastery Level is Attained
10	99%	Mastery Level is Attained
11	98%	Mastery Level is Attained
12	97%	Mastery Level is Attained
13	97%	Mastery Level is Attained
14	93%	Mastery Level is Attained
15	99%	Mastery Level is Attained
16	98%	Mastery Level is Attained
<b>Mean</b>	<b>97%</b>	<b>Mastery Level is Attained</b>

Table 8 reveals the level of effectiveness of students' learning in terms of performance task. All classes handled by different teachers attained mastery level. This indicates that students have successfully demonstrated their knowledge, understanding, and application of scientific concepts, skills, and processes through the performance task. Once they have mastered the entire class, it means they have fully fulfilled the expected outcomes of the subject and so they can effectively use their scientific knowledge in real life situations. Having achieved this accomplishment shows that the teacher engaged with learners properly while providing necessary information which led to development of their scientific skills; moreover, it indicates possibility of further advancement along one's career path in science.

**4.7.3 Quarterly Assessment.** It is indicated in Table 9 the level of students' learning in terms of quarterly assessment.

Table 9  
Quarterly Assessment

Teacher	Class Proficiency	Mastery Level of Students in Science
1	54%	Nearing Mastery Level
2	55%	Nearing Mastery Level
3	60%	Nearing Mastery Level
4	53%	Nearing Mastery Level
5	65%	Nearing Mastery Level
6	62%	Nearing Mastery Level
7	52%	Nearing Mastery Level
8	54%	Nearing Mastery Level
9	63%	Nearing Mastery Level
10	62%	Nearing Mastery Level
11	51%	Nearing Mastery Level
12	65%	Nearing Mastery Level
13	51%	Nearing Mastery Level
14	55%	Nearing Mastery Level
15	62%	Nearing Mastery Level
16	62%	Nearing Mastery Level
<b>Mean</b>	<b>54%</b>	<b>Nearing Mastery Level</b>

Table 9 reveals the level of effectiveness of students' learning in terms of quarterly assessment. All classes handled by different teachers attained nearing mastery level.

In the quarterly assessments, most students are about to gain mastery, and this would give the subject of science a strong performance index. Restated, it means that these students have done well by showing much comprehension about key scientific ideas, abilities and facts. While they may not have reached the highest mastery level, their performance indicates a high level of competency and proficiency in the subject. The consistent attainment of nearing mastery level across different teachers suggests that the teaching practices and instructional quality are effective in promoting student learning and achievement in science. It demonstrates the collective efforts of the teaching team in providing students with a solid foundation in the subject matter. With continued support and targeted instruction, students have the potential to attain the highest mastery level and further excel in their scientific pursuits.

**4.8 Association Between Teachers’ Training and Students’ Learning**

Table 10 presents the association between teachers’ training and students’ academic achievement.

Table 10  
**Association Between Teachers’ Training and Students’ Academic Achievement**

**Pearson's Correlations**

Variable		Teachers’ Work Attitude	Teaching Pedagogy	Classroom Management	Students’ Needs	Students’ Assessment	Written Works	Performance Tasks	Quarterly Assessment
1. Teachers’ Work Attitude	Pearson's r	—							
	p-value	—							
2. Teaching Pedagogy	Pearson's r	0.429	—						
	p-value	0.098	—						
3. Classroom Management	Pearson's r	0.303	-0.182	—					
	p-value	0.255	0.501	—					
4. Students’ Needs	Pearson's r	0.271	0.271	0.082	—				
	p-value	0.309	0.309	0.762	—				
5. Students’ Assessment	Pearson's r	0.378	0.378	0.480	0.513	—			
	p-value	0.149	0.149	0.060	0.042	—			
6. Written Works	Pearson's r	0.009	-0.350	0.270	-0.085	0.047	—		
	p-value	0.974	0.184	0.312	0.754	0.861	—		
7. Performance Tasks	Pearson's r	-0.043	-0.012	-0.188	-0.225	-0.260	-0.010	—	
	p-value	0.874	0.965	0.486	0.402	0.331	0.970	—	
8. Quarterly Assessment	Pearson's r	-0.027	-0.027	-0.443	-0.114	-0.307	0.435	0.356	—
	p-value	0.922	0.922	0.086	0.674	0.247	0.092	0.176	—

Table 10 presents the association between teachers’ training and students’ learning. The table reflected that there was no significant difference between teachers' training and student academic achievement. Independent variables namely: teachers’ work attitude, teaching pedagogy, classroom management, students’ needs and students’ assessment had no significant difference with the dependent variables namely, written works, performance tasks and quarterly assessments because the p-value is more than 0.05. Teacher training plays a crucial role in education, it is essential to acknowledge that other factors could influence students’ academic achievement.

## 5. DISCUSSIONS AND CONCLUSION

This chapter presents the discussions of the results of the study, conclusion, and recommendations.

### 5.1 Discussions

The succeeding discussions are based on the data collected and these are supported by some related literature and studies.

The level of effectiveness of teachers' training had an overall mean of 4.7 described as very high. The very high mean for the level of effectiveness of teachers' training points to a strong positive impact of the training programs on teacher practices and skills. It is reflected in their ability to work in schools. Teaching assistants shape and lead students when studying, fix their study modes, promote their self-drive for studies, reward or penalize those who deserve, assist those who are slow to understand, guide on subject choice for higher education institutions among other things (Fadlun et al., 2023).

The level of students' academic achievement in terms of written works is nearing mastery level with 64% class proficiency rating. This suggests that a significant majority of students have demonstrated a high level of knowledge and proficiency in their learning, approaching mastery in the subject matter. This indicates that the class as a whole is performing exceptionally well and is close to achieving a mastery level of understanding and skill mastery. This shows that students could make use of the ideas studied during the classes (Cabuquin, 2023).

The level of students' academic achievement in terms of performance task achieved mastery level with 97% class proficiency rating. This result indicates that nearly all students have showcased exemplary competence and understanding of the subject matter in practical application through their performance-based assessments. This high proficiency level suggests that the class as a whole has demonstrated near-mastery level performance in performance tasks, showcasing their advanced skills, problem-solving abilities, and comprehensive grasp of the learning objectives.

The level of students' academic achievement in terms of quarterly assessment achieved an overall average of 58% interpreted as nearing mastery level. This suggests that a substantial portion of students have made significant progress and are approaching mastery in their learning, though there is room for improvement. This indicates that the class as a whole is demonstrating solid competency and is on track to achieve mastery level understanding with further support and targeted instruction. School success comes from how well they master the subjects during study or from communicating teacher-assessed grades for tests that students have taken well as well as performing tasks that have been given to them successfully. Student academic achievement is the result of knowledge acquisition marked in report cards during student learning (Fadlun et al., 2023).

When teachers were trained, there was no significant relationship with students' academic achievement indicating that training program would not have contributed much to consistent student performance improvement across all types of assessments. This suggests that factors other than the training program might be influencing the students' academic achievement in written works, performance tasks, and quarterly exams. Further analysis is needed to identify and address these additional factors to improve student achievement in all areas. The results were an indication to the effect that there is a need for the teachers to be trained so as to enhance improved academic performance by learners. It is important that cramming system is admonished in schools (Sattar and Awan, 2019).

### 5.2 Conclusions

The level of effectiveness of the teachers' training program was very high, as indicated by a mean of 4.7. This implied that the training had positively impacted teacher practices and skills. In terms of student learning, there were variations in performance across different assessments. Students showed nearing mastery level in written works and quarterly exams, indicating room for improvement. However, they have achieved a mastery level in performance tasks, demonstrating strong competence in practical application. The lack of a significant difference between teachers' training and student learning suggested that the training program might have contributed to the students' achievements in performance tasks, but not as significantly in written works or quarterly exams.

In summary, the teachers' training program has been highly effective, positively impacting student learning in performance tasks. However, further attention may be needed to bridge the gap in student performance in written works and quarterly exams.

### 5.3 Recommendations

Based on the conclusion derived from the results of the study, the following recommendations are hereby presented:

1. Investigate the specific factors that contribute to the significant impact of teacher training on student performance in performance tasks. Analyze the training content, delivery methods, and the extent of teacher implementation to identify effective practices that can be replicated and improved upon in future training programs.
2. Explore the reasons behind the variations in student performance across different assessments. Conduct qualitative research to understand the specific challenges students face in written works and quarterly exams and identify potential barriers to mastery-level achievement. This can inform the development of targeted interventions and strategies to improve student performance in these areas.
3. Examine the potential interactions between teacher characteristics, instructional practices, and student learning outcomes. Investigate how factors such as teacher experience, pedagogical approaches, and classroom environment may influence student performance.
4. Consider conducting long-term studies to assess the sustainability of the impact of teacher training on student learning outcomes. Follow up with students over an extended period to determine if the positive effects of the training program persist and lead to continued growth and academic success.
5. Explore additional variables that may influence student learning outcomes, such as student demographics, prior knowledge, or engagement levels. Investigate if these factors interact with teacher training to contribute to variations in student performance.

By pursuing these recommendations, future researchers can contribute to a deeper understanding of the relationships between teacher training and student learning outcomes, ultimately informing the design of more effective interventions to enhance student achievement in various areas of study.

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