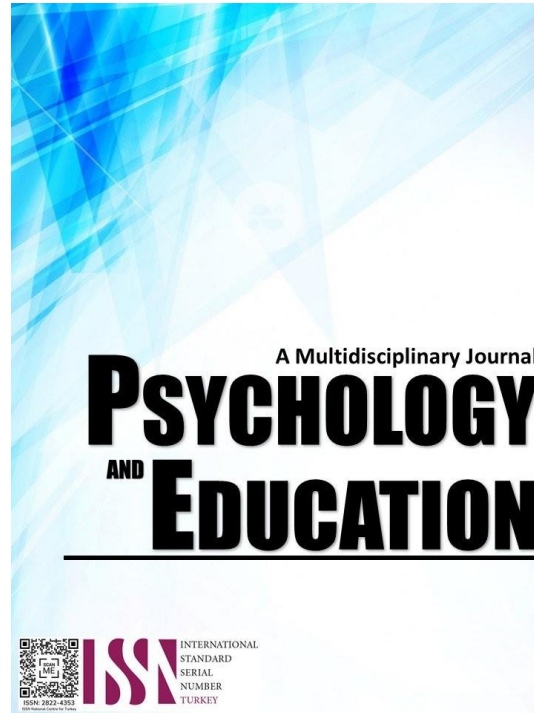


**TEACHING TECHNIQUES IN NEW SET-UP ON  
STUDENTS' ACADEMIC PERFORMANCE:  
A CORRELATIONAL ANALYSIS**



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## Teaching Techniques in New Set-Up on Students' Academic Performance: A Correlational Analysis

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### Abstract

Teaching techniques are the unique ways of carrying out a particular task, in the teaching and learning process. Academic performance is the measurement of student achievement across various academic subjects. Teachers and education officials typically measure achievement using classroom performance, graduation rates, and results from standardized tests. This research assessed the relationship of teaching techniques in new set-up on academic performance. Correlational research investigates relationships between variables without the researcher controlling or manipulating any of them. It was used under the quantitative approach. There were 191 respondents wherein 12 respondents for each class per year level were utilized by the researchers. The research was carried out in Maguikay National High School at G.K. Sudlon Mandaue City, Cebu, Philippines, 6014. A 2-page standardized questionnaire from CLIQ Cooperative Learning Implementation Questionnaire (n.d.), Differentiated Instruction (n.d.), Learning Style Questionnaire and Technology were used in this study. The Pearson  $r$ -correlation was used to determine the relationship between the two variables. Every questionnaire fundamentally plays a role in the study to effectively know the correlation of each variable. In addition, there is a significant relationship between teaching techniques in new set-up on students' academic performance. Furthermore, cooperative learning is one of the teaching techniques that greatly improves the students' academic performance more than differentiated instruction and visualization. When the teachers increase their knowledge on various teaching techniques in order to keep students engaged and motivated throughout the learning process.

**Keywords:** *academic performance, cooperative learning, correlational, differentiated instruction, quantitative, teaching techniques, visualization*

### Introduction

Cooperative learning, differentiated instruction, and visual learning are a few examples of teaching techniques. Teaching techniques, according to Mustafa (2022), "are an integrated organization that contains a set of resources, technologies, tools, and educational attitudes that the teacher employs to clarify an idea or transform a vague concept to contribute to a better state of the educational process". According to Ayeni (2011) "claims that teaching is a process that entails bringing about positive changes in students to reach particular goals".

Academic performance gauges how well a teacher, institution, and student has accomplished short- or long-term learning goals. In Narad and Abdullah's 2016 paper, academic performance is the acquired knowledge that a teacher assesses by grade and educational objectives set by students and teachers for a given period of time. In addition, they claimed that assessments or examinations are used to measure these objectives. The majority of the Maguikay High School students say that the teaching techniques help them learn and understand the concept better and that these methods have a significant impact on their academic performance, assist them in achieving learning

outcomes, and maintain their interest in learning. The researchers have noticed and are still noticing this.

International research shows that the interlinkage between the teacher and students during the process between teaching and learning motivates students rather than the lecturer/teacher monopolizing information transmission to students, according to a study in Nigeria (2013) by Isa et al. "Teaching Techniques and Students' Academic Performance". It demonstrates a strong connection between the approach and pupils' academic achievement. This result is in line with Daluba's (2013) assertion that adopting student-centered, activity-stimulating ways like the demonstration method rather than relying on the conventional strategy like the lecture method should be encouraged to improve student performance. According to Mundi (2006), teaching by demonstration is advantageous in the following ways: It conserves time and promotes a materialistic economy; it is a powerful notice-getter and instigator during lesson delivery; students are provided with immediate feedback through their products, providing a real-life situation of the course of study as students acquire the skills necessary to motivate them to simulate real-life scenarios with tools and resources. In Malolos City, Francisco (2020) concludes that teachers

can influence desired student engagement and learning outcomes at the national level, and that teachers' instructional management methods in terms of planning, teaching, and assessment procedures influence students' academic achievement to varied degrees, but they did not have a significant combined effect, and that substantial effect was not shown to be significant.

To sum up, the interaction between teachers and students during the teachers' instructional management strategies in terms of planning, teaching, and assessment procedures have varying degrees of influence on students' academic achievement, but they did not have a major combined effect, and that substantial effect was not demonstrated to be meaningful. It is advantageous to show the right method to do things, improve teachers' abilities by stepping up faculty development programs that could specify the school's vision and mission statements, and offer high-quality instruction. The researchers found a study hole in the area of how teaching methods in a new environment affect students' academic performance. While there is evidence that a variety of attitudes and behaviors are equally important to students' long-term performance, previous researchers that addressed the relationship between teachers' tactics and students' behavior have mostly focused on how teachers affect students' test scores. The focus of the researchers, however, is on the impact of innovative teaching methods on junior high school pupils' academic performance. In addition, the responses differ from those used by earlier researchers. Also, in contrast to earlier studies, which often utilize descriptive and causal designs, the researchers conducted this investigation using a correlational methodology.

The researchers identified a research gap in the study concerning the relationship between Teachers' technique in new- set up on students' academic performance. Previous researchers address the relationship of Teachers' technique towards students' behaviour focused predominantly on how teachers affect students' achievement on tests despite evidence that a broad range of attitudes and behaviours are equally important to their long-term success. However, the researchers concentrate on the relationship between teachers' techniques in a new set-up on students' academic performance in junior high school students. The respondents are also different from the previous researchers. In addition, the researchers used a correlational design to conduct this study unlike the previous studies, which usually use descriptive and causal design. Thus, this study assessed to find a

significant correlation between teachers' technique in new set-up on students' academic performance, among Junior high school students.

### Research Questions

This research assessed the relationship of teaching techniques in new set-up on the academic performance among junior high school students on one of the public schools in Mandaue City, S.Y 2022-2023, Second quarter. The results of the study were the basis for recommendations. Specifically, this answers the following questions:

1. What is the mean level of teaching technique in the new set-up in:
  - 1.1 cooperative learning;
  - 1.1 Differentiated Instruction; and
  - 1.2 Visual Learning?
2. What is the mean level of the respondents' academic performance?
3. Is there a relationship between teachers' technique in new set-up on the respondents' academic performance?
4. Based on the result, what recommendations may be proposed?

### Literature Review

#### Teachers' technique as an educational approach

It refers to the various techniques employed by teachers to facilitate effective teaching and learning in the classroom. It encompasses the diverse ways in which educators engage students, deliver content, and create an environment conducive learning. Sayuri et al. (2022) define teaching technique as the correct teaching done by a teacher to the students during the learning process to achieve the goal Biadgelign (2010). Teaching techniques are also manners, steps or general ways that doing in certain order after teaching or presentation of the activities. Teaching techniques are all plans for presenting material in an orderly fashion based on the approach chosen, teaching techniques include the principles and technique that teachers use to enable students to learn

Dwiningtiyas et al. (2020) define teachers teaching techniques are determined by student behavior and the material to be taught by the teacher. To determine effective and efficient teaching techniques, teachers must know the characteristics of students and the type of learning that must be applied. Design and choose teaching methods, not only focusing on the material or subject matter but also the way in which students

learn. Most schools today encourage students to be creative. It is a fact that human progress is coming through reasoning.

Bala (2020) defines teaching technique as the way teachers deliver the subjects to students by using certain techniques corresponding to the characteristics of students that were encountered. Each student has different characteristics from the very clever, moderate, and there are also less able to receive lessons quickly. Therefore, a teacher must be able to apply the learning method in accordance with the characteristics of students. Unless the students whose middle - low ability will be left behind in the understanding of the material that is presented. And it will cause the students mentioned who are not interested and lazy to learn because they have felt unable to do so. Teaching technique helps to determine the success or failure of a learning and teaching activity and it is a unity in the teaching system. The more precise technique that is used by teachers in teaching is expected to be more effective in achieving the achievement of learning goal Qudsyi et al. (2011).

Munawaroh (2017) define the terms of teaching methods should be able to bring the atmosphere of teaching interaction becomes instructive or educative, putting learners to take active learning, as well as foster and develop interest in learning and increase learning spirit, it can improve the learning outcomes and live up teaching process which is on going (Rohani, 2004).

Abiodun (2020) defines teaching technique as the method of teaching is a teaching strategy to achieve the expected goals. By utilizing accurate techniques, the teacher will achieve the goal of teaching smoothly. When the goals are formulated in order that students have certain skills, so that the techniques that are used must be adapted to goals. Thus teachers should use techniques that can support teaching and learning activities, so it can be used as an effective tool to achieve the goal of teaching Djamarah (2010).

The presented related literature above talk about the correct teaching done by a teacher to students during the learning process to achieve the goal defined as teaching technique. Teachers must understand the characteristics of their students as well as the type of learning that must be used in order to determine effective and efficient teaching techniques. The manner in which teachers deliver subjects to students by employing specific techniques that correspond to the characteristics of students encountered As a result, a teacher must be able to adapt the learning method to

the characteristics of the students. The more precise technique that teachers use in teaching is expected to be more effective in achieving learning goals.

### Academic performance characteristics

Academic performance characteristics refer to the specific qualities and attributes that contribute to an individual's success in an educational setting, such as motivation, persistence, and critical thinking skills. These characteristics play a crucial role in determining a student's ability to comprehend and apply knowledge effectively, leading to high levels of academic achievement.

Omran et al. (2019) define academic performance as the extent to which a student, teacher or institution has achieved their short or long-term educational goals. This performance can be measured by many tools such CGPA, skills, etc. AResearchcarried out by Ali et al. (2013) supported the above sentence by stating students' academic gain and learning performance is affected by numerous factor including gender, age, teaching faculty, students schooling, father/guardian social, economic status, residential area of students, medium of instructions in schools, tuition trend, daily study hour and accommodation as hostelrys or day scholar.

Furthermore, a study by Amasuomo (2014) defines academic performance as the outcome of education; it is the extent to which a student, teacher, or institution has achieved their educational goals. Thus, student performance is characterized by their performance on tests associated with coursework and their performance on other types of examinations (Kyoshaba, 2009).

In addition, a study by Oweikeye (2014) defines academic performance as the outcome of education; it is the extent to which a student, teacher or institution has achieved their educational goals. Thus performance is characterized by performance on tests associated with coursework and the performance of students on other types of examinations. the academic performance of students in these different settings are: student effort, previous or prior educational performance, self-motivation, the social-economic status of the students' parents, the students' age, number of hours of study per day, admission points, different entry qualifications, tuition trends and the students' area of residence rural or urban (Farooq et al.,2013).

Lamas (2015) states that academic performance involves meeting goals, achievements and objectives

set in the program or course that a

student attends. These are expressed through grades which are the result of an assessment that involves passing or not certain tests, subjects or courses. On their part, Torres and Rodríguez (2006 quoted by Willcox, 2011) define academic performance as the level of knowledge shown in an area or subject compared to the norm, and it is generally measured using the grade point average. The purpose of the school or academic performance is to achieve an educational goal, learning.

Abdullah (2019) defines academic performance as the academic performance is not affected by age, gender, and place of residence but they also said those who live near to university can perform much better than others who live far from university (Hijazi & Naqvi, 2006). Also, weak students if a group with good students will do better in academics and it will lead students to graduate on time. The fact is the effort from the students themselves if they want to improve their academic performance then they will. The presented related literature above talk about academic performance entails meeting the goals, achievements, and objectives established in the program or course that a student is enrolled in. These are expressed as grades, which are the result of an assessment that includes passing or failing specific tests, subjects, or courses. It is the outcome of education; it is the extent to which a student, teacher or institution has achieved their educational goals. Academic performance entails meeting the goals, achievements, and objectives established in the program or course that a student is enrolled in.

### Positive and Negative Effects

Munawaroh (2017) found out in his study on "The influence of teaching methods and learning environment" to the student's learning achievement that teaching techniques do make students indifferent to learning materials that are given. So that it is necessary to vary techniques to improve a student's learning achievement. The use of various teaching techniques must be adapted to the learning goal that will be implemented. This research is based on many indicators of variable aspects, namely learning atmosphere, interaction, infrastructure, and facilities. A positive learning environment can boost students' learning achievement and activity levels.

Jombang (2017) found out on his study on "Influence of teaching strategies on students academic achievement" on Craft and Entrepreneurship Subjects

that There is the influence of teaching techniques to student's achievement in class. Teachers are encouraged to use learning techniques in accordance with the conditions of the students and the material that will be taught. Students are expected to help teachers create a conducive learning environment and fun with an active and responsive attitude when the learning process goes on. Teaching techniques have a positive effect on a student's achievement, which means that good teaching is expected to improve student's learning.

Munyaradzi (2013) found out on his study on "Teaching techniques on students academic performance" that without new approaches to instruction that connect to the learning needs of students, many will perform poorly and are likely to drop out of studies. Research evidence from previous studies indicates that a student-centered learning environment seems to produce higher level learning outcomes more efficiently than a traditional teacher-centered environment. Hence, bias in selection of teaching methods by teachers in areas in which they possess exclusive monopoly knowledge should be avoided to improve students' academic performance. Therefore, teachers should create an atmosphere conducive to learning in order to enhance the development of students' learning experiences. Moreover, teachers should also increase their knowledge of various instructional strategies in order to keep students engaged and motivated throughout the learning process.

Pooja (2017) found out in his study on "The effect of teaching techniques on academic achievement" that a good teaching technique is the one that implies relevance. A good teaching techniques is the one that implies relevant and visible training values which shall motivate students And make them aware of their understanding and reflection; help them make up their critical thinking which will guarantee their trust in their own forces, thus becoming capable of deep understanding of ideas and schemes, as well As the modalities of connecting these with the values and the skills required by their future jobs.

Obilan (2017) found out from his study on "Teaching-learning technique and students' academic performance" that the study revealed that some teachers seem not to be aware of the value and impact of different teaching techniques on students' performance. This has led to inappropriate application of ineffective and often outdated techniques

Ganyaupfu (2013) found out on his study, "Teaching

method on students academic achievement” that in light of the fact that learning is a process that involves investigating, formulating, reasoning and using appropriate strategies to solve problems, teachers should realise that it becomes more effective if the students are tasked to perform rather than just asked to remember some information. The results reveal that combining both teacher-centered and student-centered teaching methods in teaching learners is the most effective approach that produces best student results. This result is consistent with the finding by Wiggins (1987) who reported that interaction between the teacher and students during the teaching and learning process encourages the students to search for knowledge rather than the lecturer monopolizing the transmission of information to the learners. The estimated mean score (mean=1.79) recorded for the student-centered approach is marginally lower than that of the teacher-student interactive approach.

Sudito and Safta (2011) found out in their study on “The relation between the teaching methods and the learning styles- the impact upon the students academic” conduct that a good teaching technique is the one that implies relevant and visible training values which shall motivate students and make them aware of their understanding and reflection, help them make up their critical thinking which will guarantee their trust in their own forces, thus becoming capable of deep understanding of ideas and schemes, as well as the modalities of connecting these with the values and the skills required by their future jobs.

Jepketer (2017) found out in his study on “Influence of teaching techniques on students’ performance in academic achievement and co- curricular activities” that the findings show that teachers’ uses theoretical teaching and lack innovative use of instructional strategies that contribute to poor students’ performance. The correlation and regression results shows that teacher centered instruction strategies was significant in predicting students’ performance.

Jalbani (2014) found out in his study on “The impact of effective teaching strategies on the students’ academic performance” and learning outcome that the teachers who are willing for professional development in this area are able to deliver even complex and complicated content effectively, helping the students generate their interest and eagerness for more opportunities of learning in a conducive environment, making all the individuals feel that they are being taught in their own unique way being unique themselves.

Han (2021) found out in his study in “The relations between teaching strategies, students’ engagement in learning, and teachers’ self-Concept” that not all well-known teaching techniques are equally effective in engaging primary school students. Likewise, not all kinds of teaching techniques are conducive to enhancing teachers’ self-concept in teaching. In the face of numerous suggestions and choices about good teaching practices, it is the teaching context and characteristics of the students that matter in bringing the best effects of a specific strategy to both students and teachers in order to achieve the ultimate goal of providing quality education, which is effective and sustainable.

The related studies presented above talk about positive and negative effects of teaching techniques .The use of various teaching techniques and the Impact of effective teaching techniques on the students` academic performance and learning outcome. Teaching techniques have a positive effect on a student's achievement, which means that good teaching is expected to improve student's learning. However, the negative result of the other study shows the negative result that some teachers seem not to be aware of the value and impact of different teaching techniques on students’ performance. This has led to inappropriate application of ineffective and often outdated techniques.

### **Academic performance of students**

Academic performance of students refers to the level of achievement and success exhibited by students in their educational pursuits, typically measured by their grades, test scores, and overall academic standing. It encompasses the students' ability to grasp and apply knowledge, their engagement in learning activities, and their consistent demonstration of academic skills and competencies.

Koranteng et al. (2021) found out in his study in academic performance, an “Insight Into Factors and Their Influences on Academic Outcomes of Students at Senior High Schools”. The study revealed that truancy affects academic performance drastically and sometimes even leads to school dropout. Also, the study finds out that other factors such as students’ parents’ levels of education and income, textbooks availability and accessibility, libraries, practical laboratory, meals provision and teachers have tremendous effects on the academic performance of students at school. Students who are above average academically, positively exposed to these factors are likely to perform better as compared to those who are

less exposed to these factors.

Mones et al. (2018) found out in his study in "Academic Performance and Behavioral Patterns" that the peers' academic performance has a strong explanatory power for academic performance of individuals. The researcher observed this effect across different channels of social interactions with calls and text messages showing the strongest correlations, further emphasizing the phenomena. As mentioned in the literature review, this effect could be caused by either peer effects (adaption) or homophily (selection). It should be noted that GPA information is used here as target and, in aggregated form, also as network feature.

Shahzadi and Ahmad (2011) found out in their study in "Academic Performance of University Students". They determine the different factors that are related to academic performance and develop an academic performance model by using structural equation modeling. They should make efforts to take initiatives in academic activities like (Presentation, Quiz, and Assignments) and update themselves with academic matters (Course objectives, Course outlines, Week plan), then they can enhance their academic Performance. In the light of these results the researcher can say that home environment is a more important construct for student academic performance at university level. The contribution of previous achievement and home environment to the academic performance of students is parallel with decades of research on the importance of these factors for university student's academic performance.

Ampofo and Osei-owusu (2015) found out in their study in "Students' Academic Performance" as mediated by students' academic ambition and effort that the child's academic performance was strongly mediated by the child's academic ambition and the child's effort. This further suggests that when these variables are present and positive, there is the likelihood that students will perform creditably well. therefore conclude that parents must encourage their children to be academically ambitious and when they do, they must work hard in order to succeed in their ambition. Also, educated mothers were found to influence the child's academic ambition much more than that of the educated father. Hence, educated mothers must be more involved in their wards education.

Mhlauli and Mphale (2014) found out in their study in Investigation on "Students Academic Performance for Junior Secondary". The findings of the study show that

lack of parents' involvement in the welfare of their children immensely contributes to students' low performance. Therefore there is a need for other stakeholders to participate in the education of their children for the rapid changes. There is a proverb which says "you can lead a horse to the river but you can't force it to drink." But with proper guidance students' mindset can be changed.

Tesfay (2017) found out in his study in "Factors Affecting Students Academic Performance" at preparatory and high Schools level that It has been found that comparing factors that affect students academic performance was a complex issue which was multidimensional. This had been indicated from the findings in terms of, percentage of independent variables among each other. Based on the finding, an institutional factor which affect academic performance of students was the non availability of teaching material, i.e. shortage of instructional material. Lack of sufficient instructional material such as books, modules, library etc. hinder them from being academically efficient. Latiff et al. (2014) found out in his study in "Factors Contributing to Academic Performance Of Students in A Tertiary Institution" that gender, nationality, involvement in ECA, intention to pursue higher studies and learning preferences contributed to students' academic performance significantly. It is necessary for educators to understand the factors that may contribute to students' academic success so as to plan better classroom activities and strategies of teaching and learning.

Hamid et al. (2010) found out in his study in a "Study Of University Students' Motivation and Its Relationship with Their Academic Performance" that students who are intrinsically motivated perform much better academically than students who are extrinsically motivated. Extrinsically motivated students might do a good job or perform well to achieve a certain reward, but it does not keep them motivated for long-term and overall performance does not change or is consistent.

Jayanthi (2014) found out in his study "Factors Contributing To Academic Performance Of Students" the results of this study showed that using past year examination papers as one of the learning styles, improved cGPA significantly. Students who did not use this method of learning scored significantly lower cGPA scores. The results herein are in agreement with Felder who reported that an association exists between students' learning preference, teaching style and academic performance. However, Mlambo reported that there is no significant difference in academic performance among different learning preferences.

Ige (2016) found out in his study in “Causes And Remedies To Low Academic Performance” of students in public secondary schools that the findings of the research concluded that there are several factors causing the low academic performance of students in Ijero Local Government secondary schools in Ekiti State. The finding revealed that all the items listed are causes of low academic performance of students by the teachers in secondary schools. Also the result in table two reveals that all the items listed except the involvement of parents in Parents Teachers Association (P.T.A) which respondents disagree upon are parents support factors that contribute to the low academic performance of students in secondary schools in Ijero Local Government area of Ekiti state.

The related studies presented above discuss academic performance and provide insight into the factors that influence academic outcomes. Student causes and remedies for low academic performance among students indicate that there are several factors causing the low academic performance of students. Also, other factors, such as students' parents' levels of education and income, textbook availability and accessibility, libraries, practical laboratories, meal provision, and teachers, are discovered to have a significant impact on students' academic performance at school.

## Methodology

### Research Design

This research utilized correlational design under a quantitative approach. Bhandari (2020) defines quantitative research as the process of collecting and analyzing numerical data. It can be used to find patterns and averages, make predictions, test causal relationships, and generalize results to wider populations. Furthermore, Cristobal and De la Cruz-Cristobal (2017) add that in keeping with Bhandari's definition of a quantitative method, this study used a correlational design. Getting and analyzing numerical data is the process of quantitative research. It can find trends and averages, predict outcomes, confirm causal relationships, and extrapolate findings to broader populations. Also, according to Cristobal and De la Cruz-Cristobal (2017), this type of research entails statistics and statistical analysis, which argue that measurement is the best tool for studying phenomena. This study intended to determine the connection between teaching techniques in new set-up on students' academic performance. In a correlational

analysis design, researchers utilized the correlation statistic test to assess the degree of association between two or more defined and calculated variables or ranking sets, according to Creswell (2012). This study determined how the new teaching techniques affect students' academic performance. In a correlational analysis design, researchers utilized the correlation statistic test to assess the degree of association between two or more defined and calculated variables or ranking sets, according to Creswell (2012).

The quantitative approach was accepted because the researchers require quantifiable information to deliver an accurate and reliable outcome. A correlational strategy will help this investigation. This will enable the researchers to assess the relationship between students' academic performance and the method used by teachers to set up their networks. By having respondents complete survey questionnaires, the essential data will be efficiently created.

### Research Sample and Sampling Technique

The population of the enrolled junior high school in Maguikay High School for the S.Y. 2022-2023 is 765 and using the Slovin's formula from 765 the researchers have utilized 191 respondents, 12 respondents to each class per year level. The junior high school students from grades 7 to 10 were specifically chosen by the researchers that were qualified to respond to the questions in the survey questionnaire; the researchers make use of stratified sampling. In order to complete the sampling process, the entire population is divided into smaller groups or strata, according to Moore and McCabe's (2006) definition of stratified sampling. Also, it is typical to sample key subgroups of the population individually before combining these samples, which in this case will be stratified depending on their grade levels. A stratified sample operates in this way. The researcher selected the proportional sample at random. This should be adhered to give the presence of subgroups in order to prevent biases and guarantee that everyone has an equal chance at selection.

### Research Instruments

The researchers used a research instrument to collect the required data for the study. Research instruments, as defined by Wilkinson and Birmingham (2003), are pieces of equipment used for data gathering. They come in a variety of formats, such questionnaires, and the most widely employed techniques include observation, surveys, and interviews (Triueros & Sandoval, 2017).



The first questionnaire was adapted from (2) page standardized survey that was taken from Cooperative Learning Implementation Questionnaire. (n.d.), Differentiated Instruction from a Student's Perspective Survey. (n.d.) and The survey used a rating scale. The second questionnaire was also adapted from academic performance research questionnaire Technology, E. (n.d.). A five- or seven- point scale known as the "rating scale" or "likert scale" Always, Mostly, Rarely, Strongly Agree, Agree, Neutral, Disagree, and Strongly Disagree are all acceptable responses. Every respondent contributes to the study in order to understand the association between each variable. Nine questions make up the teaching techniques Questionnaire, which links teachers' techniques for teaching social studies to student achievement. Moreover, the questionnaire has ten questions. To input their responses correctly and accurately, respondents must read and understand the questionnaire; they must check the box next to each answer to indicate that they have done so. This structured questionnaires was incorporated into the study since it was a perfect fit for its layout and because the researchers needed a sizable number of responses to help with data collection. The researchers used this instrument to gauge the relationship teaching techniques in new set- up on students' academic performance .

### Data Procedure

Data collection involved carefully acquiring the required information in order to prevent data distortions and guarantee that the researchers' findings are devoid of flawed logic. (Parveen & Showkat, 2017, citing Sapsford & Jupp, 2006).In order to ensure the validity of the study, the researchers employed proper data collection methods.

The gathering of data was conducted at the Maguikay high school with 191 students as the respondents. They answered a 2 - page survey questionnaire, with two major components based on the two variables of the study.

### Phase 1. Approval of the Transmittal Letters and the Survey Questionnaire

The researchers were able to officially review their research study after receiving a letter of transmittal. Before conducting the research, the researchers will organize the necessary papers, which include the transmittal letter, survey questionnaire, and affidavit of

consent. The researchers formally reviewed the study. Before beginning the study, the researchers prepared the relevant paperwork, such as the transmittal letter, survey questionnaire, and affidavit of permission. The research professor looked over the survey questionnaires before sending them. The transmittal letter, survey, and final papers were then signed by the research professor, along with the declaration of permission. Before sending the transmittal letter, the survey, and the affidavit of an agreement to the principal's junior high school office for final clearance to start the research, the researchers first received approval from the research coordinator.

### Phase 2. Identification of the Research Setting and Respondents

The researchers chose Mandaue City as the general setting and the Maguikay national high school as the specific setting of the study. Finally, the researchers had a total of 191 respondents. Moreover, the respondents had been chosen through stratified random sampling to gathered sufficient data Phase 3. Data Collection When the researchers were permitted to conduct the study, the researchers presented the survey questionnaire through a 2 - page survey questionnaire which were given to the respondents. Afterward, the researchers discussed the content of affidavit consent and guided the respondents in answering the questionnaire. When the respondents finished providing answers to the questionnaire, the researchers proceeded in tallying, recording, and analyzing data.

### Distribution Phase

The researchers began by distributing 191 surveyed questionnaires to respondents.

### Survey Phase

The respondents' permission was sought by the researchers in order to conduct the study. After reviewing the affidavit of consent's specifics, the researchers guided the participants through the survey's questions.

### Retrieval Phase

Once the participants had completed the survey and provided their requests, the researchers examined and collected each questionnaire.

### Tabulation and Tallying Phase

Once they had gathered all the required information and the complete result, the researchers tallied the findings.

## Statistical Treatment of Data

According to Vishak (2022) stated that the statistical processing of data is a method used to transform uninterrupted raw data into something that can be understood. Furthermore, treatments are divided into two types: descriptive statistics, which summarize the study data in the form of a graph or summary statistic, and inferential statistics, which generate predictions and test hypotheses based on your data. The researchers calculated the percentage in each table and determined the frequency of each response using Pearson's Correlation Coefficient in order to scientifically assess and understand the data needs for the study and using the t-test (t-value) to test the significant relationship of the two variables.

According to Vaidya, the Pearson's Correlation Coefficient is a statistical indicator of the strength of a linear relationship between paired data (2020).  $r =$  Pearson Coefficient in this case.  $x^2 =$  sum of the squared  $x$  scores,  $y^2 =$  sum of the squared  $y$  scores,  $n =$  number of stock pairs,  $xy =$  total of products of the paired stocks,  $x =$  sum of the  $x$  scores,  $y =$  sum of the  $y$  scores. Three values could come out of the algorithm after measuring the data that would be gathered. If the outcome is negative, it means there is a very strong negative correlation between the two variables. On the other hand, if the measurement yields a zero result, the two variables have no relationship. Finally, a positive outcome indicates a strong positive link between the two variables.

Thus, the researchers chose this statistical tool due to the use of correlational design. The researchers are advised by their research facilitator to use Pearson's Correlation Coefficient.

## Ethical Considerations

A set of guidelines that direct your research's designs and methods are called ethical considerations in research (Bhandari, 2022). While conducting the research, the application of ethical issues were given top priority. The researchers adhere to ethical principles of thoughtfulness, confidentiality, openness, and neutrality. To secure an objective quantifiable result that acts as the anchor for supporting their assertions, the researchers make use of these ethical issues. Prior to the study, consideration was used with the respondents' complete agreement. The researchers used confidentiality to avoid sharing any findings that

others have already made or are working on. To ensure that the data is genuine and unaltered, transparency was achieved by reporting the figures that were acquired in real-time during this phase. By preventing participants in the study from being pressured into participating or subjected to harsh conditions, social responsibility was upheld. The researchers acted objectively, putting aside their own personal and subjective ideas.

Furthermore, the researchers ensured that the research participants are safe from danger and that no embarrassing, frightful, or offensive situations arise. The goal of the study, the type of information that was collected from the respondents, and how that information was used were all briefly explained by the researchers to the respondents. The participants were informed in advance by the researchers that their participation in the study is with their full agreement. The researchers are certain that following these ethical guidelines would guarantee the respondent's safety and the accuracy and integrity of the data used in this study.

## Results and Discussion

Table 1 presents the weighted mean of the respondents' teaching techniques. The highest weighted mean of (3.55) which has the statement, "Cooperative learning helps meet my academic goals". and the lowest mean of (3.09) which has the statement of "My teacher frequently modifies classroom activities based on my outside interests". Followed by the overall mean (3.31) with the verbal interpretation, Students always observed teaching techniques in class. This implies that the respondents work together in small groups on a structured activity. They are individually accountable for their work, and the work of the group as a whole is also assessed. Cooperative groups work face-to-face and learn to work as a team. These implications are supported by Del-barco et al. (2021) that cooperative learning is an effective tool for encouraging students to develop academic goals that motivate them to fully engage with the tasks they are set in order to acquire knowledge and skills (learning goals).

Cooperative learning as the use of small groups of students working together to increase their personal learning and that of their group members. Students are placed into small groups, participants in the groups work together for the benefit of everyone in the group Burton (2019). However, students whose interests are embedded in their education are more likely to stay



engaged through school and into whatever follows, and it's supported by Engler (2022) which states that learning itself becomes an interest, they become self-motivated to build on their knowledge.

Table 1. *The weighted mean of cooperative learning, differentiated instruction and visualization as a teaching technique in new set-up in:*

<i>Cooperative Learning</i>	<i>Mean</i>	<i>Descriptive</i>
Cooperative learning enhance your social skills as a student.	3.38	Always
Cooperative learning helps meet my academic goals.	3.55	Always
Cooperative learning promotes friendship among students.	3.25	Always
<b>Differentiated Learning</b>		
My teacher lets us demonstrate what we know and are able to do in different ways.	3.44	Always
My teacher frequently modifies classroom activities based on my outside interests.	3.09	Often
Regardless of the content, my teacher always pre-tests us to determine what we already know prior to introducing any new subject area. bag-ong hilisgutan.)	3.28	Always
<b>Visual Learning</b>		
I remember things that I see, rather than things that I hear.	3.23	Often
I learn best when my teacher uses visual aids when discussing.	3.37	Always
If I had the choice to learn new information through a lecture or textbook, I would choose to read it rather than hear it.	3.20	Often
<b>Overall mean</b>	<b>3.31</b>	<b>Always</b>

Student interest in a topic holds so much power. When a topic connects to what students like to do, engagement deepens as they willingly spend time thinking, dialoging, and creating ideas in meaningful ways. Making learning contextual to real-world experiences is a key learning technique for student interests Mccarthy (2014). Overall, cooperative learning when used as an instructional technique has a positive effect on students' academic performance and can be useful in helping students meet their academic goals.

Table 2. *The weighted mean of respondents' academic performance.*

<i>Questions</i>	<i>Mean</i>	<i>Descriptive</i>
I made myself ready in all my subjects.	4.22	Strongly Agree
I pay attention and listen during every discussion	4.30	Strongly Agree
I want to get good grades in every subject	4.59	Strongly Agree
I actively participate in every discussion	4.10	Agree
I gain focus when I see technical problems.	3.84	Agree
I exert more effort when I do difficult assignments	4.04	Agree
Solving problems is a useful hobby for me.	3.94	Agree
I imagine what my work will look like in the end	4.10	Agree
I will try different ways of doing it if I feel things are not going well.	4.18	Agree
I enjoy doing classroom activities.	4.02	Agree
<b>Overall Mean</b>	<b>4.14</b>	<b>Agree</b>

Table 2 presents the weighted mean of the academic performance. The highest weighted mean of (4.59) which has the statement, "I want to get good grades in every subject", and the lowest mean of (4.02) which has the statement, "I enjoy doing classroom activities". Followed by the overall mean (4.14) with the verbal interpretation, students agree that efforts are necessary to get satisfactory academic performance. This implies that academic performance is the outcome of education; it is the extent to which a student, teacher or institution has achieved their educational goals. Thus performance is characterized by performance on tests associated with coursework and the performance of students on other types of examinations. grades can also be a factor for consideration in an honor society. These implications are supported by Torres and Rodríguez (2006 quoted by Willcox, 2011) define academic performance as the level of knowledge shown in an area or subject compared to the norm, and it is generally measured using the grade point average .The purpose of the school or academic performance is to achieve an educational goal, learning.

In addition, student performance is characterized by their performance on tests associated with coursework and their performance on other types of examinations. Moreover, students' academic ambition and effort academic performance was strongly mediated by the students academic ambition and effort and it is supported by Shahzadi and Ahmad (2011) that students should make efforts to take initiatives in academic activities like (Presentation, Quiz and Assignments) and update themselves with academic matters (Course objectives, Course outlines, Week plan), then they can enhance their academic



Performance. Overall, academic performance entails meeting the goals, achievements, and student efforts put in to have satisfactory academic performance.

Table 3. Relationship among teachers' technique in new set-up on the respondents' academic performance

Variable	Mean	R	Strength of Correlation	T-value	Critical Region	Decision
Cooperative Learning	3.39	0.31	Moderate Positive	4.49	1.9726	Reject HO
Academic Performance	4.14					Accept H1

Table 3 pearson-r Correlation was used to identify the relationship between the two variables, cooperative learning, and academic performance. Table 5 shows a moderate positive correlation between the two variables. It is that  $r = 0.34$  which means that the strength of the correlation between the two variables is a moderate positive. It signifies that the two variables being compared have a perfect positive relationship; when one variable moves higher or lower, the other variable moves in the same direction with the same magnitude Nickolas (2021). This implies that cooperative learning has considerable educational benefits. Cooperative learning environments tend to be more dynamic, appealing, and enjoyable, as well as giving students more responsibility and power over their learning. Furthermore, in cooperative learning, students become aware that they depend on one another and must push themselves to do their best. This implication is supported by Melihan and Sirri (2011) who concluded that cooperative learning is more effective in comparison to traditional methods for improving academic performance. The core ingredient of cooperative learning is that students work in a group, trying to achieve a shared target, thus adding value to the success of the group. This component helps students in many other ways, for example, in improving their self-concept, self-confidence (Zakaria, Solfitri, Daud & Abidin 2013). Overall cooperative learning is an effective technique in improving students' academic performance.

Table 4. Pearson-r Correlation was used to identify the relationship between the two variables differentiated instruction and academic performance.

Variable	Mean	R	Strength of Correlation	T-value	Critical Region	Decision
Differentiated Instruction	3.27	0.26	Weak Positive	3.70	1.9726	Reject HO
Academic Performance	4.14					Accept H1

It shows a weak positive between the two variables. It is that  $r = 0.26$  which means that the strength of the correlation between the two variables is a weak positive. A weak positive correlation indicates that, although both variables tend to go up in response to one another, the relationship is not very strong Cherry (2022). Accept H1 which means that there is a relationship between the two variables. This implies that Differentiated instruction creates successful learning for students and boosts their performance. Furthermore, differentiated instruction in the classroom includes greater student engagement, social and academic inclusivity, and greater confidence for students. Differentiating instruction allows teachers to support each student and adhere to standards and curriculum guides. This implication is supported by Koeze (2007) found out in his study that the fact that differentiating for learning styles increases student performance. Overall, differentiated instruction has a positive impact on students' academic performance and it enhances greater student-teacher engagement.

Table 5. Pearson-r correlation was used to identify the relationship between the two variables visual learning and academic performance

Variable	Mean	R	Strength of Correlation	T-value	Critical Region	Decision
Visual Learning	3.27	0.21	Weak Positive	2.95	1.9726	Reject HO
Academic Performance	4.14					Accept H1

Table 5 pearson-r Correlation was used to identify the relationship between the two variables visual learning and academic performance. It shows a weak positive between the two variables. It is that  $r = 0.21$  which means that the strength of the correlation between the two variables is a weak positive. Cherry (2022), a weak positive correlation indicates that, although both variables tend to go up in response to one another, the relationship is not very strong. Accept H1 which means that there is a relationship between the two variables. This implies that Visualization enhances attention on students, because it keeps them focused on the subject matter and to create pictures in their heads based on what they read or hear. This implication is supported by Hasan et al. (2015), who found out in his study that using visualization as a teaching technique stimulates thinking and improves the learning environment in a classroom. Overall, students are able to visualize what the teacher is



discussing, which can help them not only understand but also remember what they have seen. This strategy can help students in all academic areas.

Table 6. *Pearson-r Correlation was used to identify the relationship between the two variables teaching techniques and academic performance*

Variable	Mean	R	Strength of Correlation	T-value	Critical Region	Decision
Teaching Technique	3.31	0.34	Moderate Positive	4.98	1.9726	Reject HO
Academic Performance	4.14					Accept H1

Table 6 pearson-r Correlation was used to identify the relationship between the two variables teaching techniques and academic performance; it shows a moderate positive between the two variables. It is that  $r = 0.34$  which means that the strength of the correlation between the two variables is a moderate positive. It signifies that the two variables being compared have a perfect positive relationship; when one variable moves higher or lower, the other variable moves in the same direction with the same magnitude Nickolas (2021). This implies that a good teaching technique is the one that implies relevant and visible values, which will motivate students, make them aware of their understanding and reflection, and help them set their academic goals.

Furthermore, it is students who matter in bringing the best effects of a specific technique to both students and teachers in order to achieve the ultimate goal of providing quality education that is effective and sustainable. These implications are supported by Munawaroh (2017), who found in his study that teachers are encouraged to use learning techniques in accordance with the conditions of the students and the material that will be taught. Students are expected to help teachers create a conducive learning environment and fun with an active and responsive attitude when the learning process goes on. Overall, teaching techniques have a positive relationship on student performance especially cooperative learning among the three teaching techniques implying that good teaching is expected to improve student learning.

### Conclusion

Cooperative learning greatly improves the students' academic performance more than the differentiated instruction and visualization. Therefore, it is necessary

to develop the teaching techniques especially in the new set-up in a way that helps develop the abilities and skills of students. According to Elger theory (2007) When people learn and grow, they are empowered to create results that make a difference. Working and learning together in ways that make the world better has been a primary goal of higher education. When the Teachers increase their knowledge on various teaching techniques in order to keep students engaged and motivated throughout the learning process.

Students. The students can benefit from this study knowing that teaching techniques has a relationship with their academic performance, when they observe that their teacher is using teaching techniques; they may have more opportunities to engage as students in the learning process and support their academic performance.

Teachers. Teachers should develop the teaching techniques especially in the new set-up in a way that helps develop the abilities and skills of students, specifically the cooperative learning technique in order to enhance the development of students' learning experiences. Furthermore, teachers should also expand their knowledge on various teaching techniques.

Future Researcher. Becoming a future researcher is a privilege that every student can have. With this study being initially a new problem being tackled and studied on a local scope, this can be their guide or instrument to produce a good research output especially if their problem deals with the teachers technique and students' academic performance. This will be a good source of information that can provide facts and ideas that is relevant to their study. Additionally, they can use these titles to strengthen their research: (1) Effect of Teaching styles on students motivation, (2) Relationship between teaching techniques in enhancing students critical thinking skills, (3) Students Learning style on their academic achievement, (4) Teaching techniques in enhancing students learning, (5) Teaching strategies in building a positive learning environment.

Administrator. The private or public sector may utilize this study to further their understanding of the teacher's technique. This study can meaningfully contribute to the administrators so they will know on what technique that they should use to improve the student's academic performance.

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