



# Differentiated Instruction on Academic Performance in Filipino Subject

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## Authors' contributions

*This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.*

## Article Information

DOI: <https://doi.org/10.9734/ajess/2024/v50i71473>

## Open Peer Review History:

This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here: <https://www.sdiarticle5.com/review-history/119152>

Original Research Article

Received: 16/04/2024

Accepted: 18/06/2024

Published: 24/06/2024

## ABSTRACT

**Aims:** The purpose of this study is to investigate the effects of differentiated instructions used by the teachers on the students' academic performance in both the control and experimental groups.

**Study Design:** quasi-experimental method.

**Place and Duration of Study:** The study was conducted among 60 students, composed of a control and an experimental group of Grade 9 students from Union National High School, Monkayo East District, Division of Davao de Oro, in the year 2023–2024.

**Methodology:** The study used purposive sampling to identify its respondents. This study used a researcher-made questionnaire to collect the necessary data in the pretest and posttest. This research used the mean, standard deviation, and t-test to analyze the raw data obtained from the respondents. They use a t-test to determine if the experimental group's students' scores significantly differed from the control group's before and after the intervention.

**Results:** The main findings revealed that both the control and experimental groups showed improvement in their posttest scores compared to their pretest scores. However, the high value of the t-test indicates that there is sufficient evidence to contradict the null hypothesis. Furthermore, the findings indicate that using differentiated instruction can make learning more rewarding and easier.

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**Cite as:** Pinaranda, Sharon M., and Myrna B. Sario. 2024. "Differentiated Instruction on Academic Performance in Filipino Subject". *Asian Journal of Education and Social Studies* 50 (7):408-15. <https://doi.org/10.9734/ajess/2024/v50i71473>.

**Conclusion:** The use of differentiated learning instruction as a teaching strategy can have a significant and positive effect on the academic success and attitude of Filipino subject. We recommend strengthening the use of different strategies in classes. Additionally, we should provide teachers with scaffolding to effectively implement the strategy in their classes.

*Keywords: Differentiated instruction; academic performance; Filipino 9.*

## 1. INTRODUCTION

Differentiated Instruction (DI) is a pedagogical strategy that tailors instruction to each student's readiness level, interests, and learning style. It rejects the one-size-fits-all educational concept and acknowledges that kids learn best when instruction is personalized to their individual needs and skills [1]. Differentiated education offers a viable solution to the difficulties in students' activities. DI aims to improve deeper knowledge of the subject matter, increase student engagement, and, ultimately, boost motivation by tailoring instruction to the needs of each student. It is aligned with the concepts of inclusivity and equity, ensuring that all students, regardless of background or prior knowledge, have an equal chance to thrive in the classroom [2].

Differentiated instruction (DI) is the differentiation of content, process, and product to anticipate and respond to changing student interests, needs, and readiness. Teachers modify what students learn, or instructional content, to better fit each learner's needs. Teachers plan activities that accommodate how students learn. Teachers give pupils opportunity to demonstrate what they have learned [3]. Differentiated instruction is a teaching approach that allows teachers to thoroughly understand each student's readiness, interests, and learning modalities by employing a variety of instructional and management strategies [4]. Teaching with student variability in mind allows teachers to plan diverse approaches to what students need to learn, how they will learn it, and how students can express what they have learned, increasing the likelihood that each student will learn as much as he or she can in the most efficient manner [5].

Differentiated teaching, a cyclical phenomenon, addresses the learner's requirements and interests (strengths and weaknesses) by adapting learning to their specific demands (material, process, and product), as we will detail in the following sections. However, unless you want each pupil to grow and achieve, this strategy is pointless [6]. This necessitates a

higher level of fulfillment from the educator, who is the key to instilling such qualities in their students. Thus, one of the concerns included the challenge of meeting each student's individual needs [7].

Teachers can differentiate, or adjust, five class features to maximize the possibility that each student learns most effectively. These elements are: (1) content, which refers to what one teaches and how they provide students with access to relevant information and ideas; (2) process, which describes how students grasp and acquire the necessary knowledge, understanding, and skills related to a specific topic; and (3) products, which refers to how students demonstrate their acquired knowledge, understanding, and abilities [8].

Differentiated instruction enhanced pupils' performance. Before using differentiated teaching, teachers should administer a learning style assessment to their students. This will provide them with the information they need to personalize lessons to the students' preferences and interests. According to the study, differentiated instruction improves student success and performance [9].

Due to the lack of interaction among students in the classroom, the secondary school encountered difficulties in teaching Filipino subject. As a result, the implementation of differentiated instruction needs to be studied further. In fact, the researcher also wonders if the appropriate teaching can help students overcome having never heard of Filipino subject in grade 9. Since the school does not have data yet, this is an empirical effort. Therefore, the researcher sought to identify the obstacles that Filipino 9th grade students have to increase their academic performance in Filipino activities.

### 1.1 Theoretical Background

The philosophy of differentiated instruction is based on Vygotsky's sociocultural development theory. The Zone of Proximal Development and Scaffolding (ZPD) holds significant importance in

differentiated instruction. It explains that meaningful learning requires students to collaborate with peers, take on slightly challenging tasks beyond their comfort levels, and receive scaffolding from their teachers. With the assistance of someone with greater skill, students can complete the assigned duties [10].

The idea behind differentiated instruction is that students learn most effectively when their teachers consider the variations in their readiness levels, areas of interest, and learning profiles [9]. Utilizing each student's learning potential to the fullest is a primary goal of individualized education. Differentiated education acknowledges the diversity of the student body and reinforces the idea that every student has a unique learning style in the classroom [11].

Differentiated instruction has the potential to improve student academic performance as well as teachers' attitudes and impressions of their own teaching. Differentiated instruction (DI) was used by all the participants to deliver their classes, and the study looked into how secondary instructors used it. Participants used a range of differentiation tactics in their classes with differing degrees of proficiency based on the findings. Evidence revealed that, in order to account for variations in students' interests and learning profiles, all participants employed instructional adjustments that needed little planning ahead of time [12].

They have demonstrated the benefits of differentiated instruction based on a learning style inventory. To address the issue of student diversity, they implemented differentiated instruction. They used differentiated instructions. The study's findings addressed teachers' teaching beliefs, perceptions, attitudes, and comprehension of how to differentiate lessons, as well as the fact that students made better progress than students in a non-differentiated classroom. The findings showed that there were favorable opinions on diversified instruction and a conviction that it is necessary for students to succeed [13].

## **1.2 Research Objectives**

This study aims to investigate the effects of differentiated instructions used by the teachers on the students' academic performance in both the control and experimental groups in the Grade 9 Bronze and Silver sections of Union National High School, Monkayo East District, Division of

Davao de Oro, Philippines. Specifically, this study seeks to answer the following questions:

1. What are the pretest scores of the control and experimental groups?
2. What are the posttest scores of the control and experimental groups?
3. Is there a significant difference between the pretest and posttest scores of the control group?
4. Is there a significant difference between the pretest and posttest scores of the experimental group?
5. Is there a significant difference between the pretest and posttest scores of the control group and the experimental group?

## **1.3 Statement of Null Hypothesis**

HO1: There is no significant difference between the pretest and posttest scores of the control group.

HO2: There is no significant difference between the pretest and posttest scores of the experimental group.

HO3: There is no significant difference between the pretest and posttest scores of the control group and the experimental group.

## **2. METHODS**

### **2.1 Research Design**

This research use a quasi-experimental method. It will involve two groups: controlled and experimental groups, with pretest and posttest information. The experimental group will benefit from the treatment under investigation, whereas the control group will typically receive the treatment using a standard technique [14].

The study was experimental in nature. It will use pretest-posttest, a matched group consisting of two classes from regular sections at the Grade 9 level. The use of an experimental study to estimate the causal effect of an intervention on the target population without random assignment. It shares similarities with the traditional experimental or randomized controlled design. Experimental procedure designs typically allow the researcher to control assignment to treatment conditions.

### **2.2 Location of Study**

This study focused on Union National High School in the Municipality of Monkayo, Davao de

Oro. The researcher chose to measure academic performance through the teacher's use of differentiated instruction in discussions. Because the research took place within the school itself, the researcher found it easier to administer and receive questionnaires at the level of the respondents' answers.

### 2.3 Research Instruments

The researcher developed a questionnaire for the study. This is based on the Department of Education's curriculum guide and learning competencies. The pre-test and post-test will each contain 40 items, and all test materials will cover lessons for the first marking period. Prior to test construction, we create the table of Specification (TOS) to ensure an equal distribution of test items based on the skills covered during the marking period.

### 2.4 Research Respondents

The respondents to this study will consist of 60 Grade 9 learners at Union National High School of Monkayo District, Davao de Oro, for the school year 2023-2024. In Grade 9, the school has three sections, and the researcher will only choose two to include in the study. The control group will be in Grade 9 (Section Bronze). The experimental group will be in Grade 9, Section Silver, which will consist of 30 students.

### 2.5 Distribution of Respondents

Group	Section	Respondents
Control Group	Bronze	30
Experimental Group	Silver	30
<b>Total</b>		<b>60</b>

### 2.6 Research Procedure

After obtaining approval from the Panel of Examiners and the endorsement letter from the Office of the Professional School, the researcher collects data through the following methods: The researcher prepares and sends a letter to the Division of Schools Superintendent of Davao de Oro, seeking permission to conduct studies in the identified school. Once approved, it will be used

by the latter to obtain permission from the school principal and gain access to the respondents.

The researcher personally conducts and administers the pretest and posttest. The researcher gives instructions prior to administering the questionnaires to ensure honest, clear, and complete answers. To ensure that the questionnaire is for its intended purpose, the researcher personally collects it immediately after answering and sends the aggregated data to the statistician for appropriate statistical treatment. The researcher analyzes and interprets the results based on the purpose of the study.

## 3. RESULTS AND DISCUSSION

Teaching Filipino subjects poses numerous challenges for students. The topics covered are relevant to everyday life and address contemporary issues that students can relate to. Additionally, parents can guide or assist their children with their homework or projects in Filipino subjects, thereby enhancing their academic performance and fostering parental involvement.

### Pretest scores of the control and experimental groups:

**Table 1. Academic Performance**

Filipino Subject	Pre-test	Post test	Description
Control Group	81.35	82.01	Fair
Experimental Group	81.55	90.45	Excellent

Table 1 shows the students' scores in the pretest, with the control group getting 81.35 with a description of medium and the experimental group getting 81.55 with a description of fair. Meanwhile, in the posttest, the control group scored 82.01 with a description of average, and the experimental group scored 90.45 with a description of excellent. Respondents to differentiated instruction in Filipino teaching expressed attitudes toward the Filipino subject, with the control and experimental groups receiving the highest scores.

**Table 2. Pretest**

Pre-test	Number of students	Mean	Class proficiency	Competency level
Control Group	30	20.8	41.6	Achieved
Experimental Group	30	19	38	Not Achieved

Table 2 shows the pretest mean scores. The control group scored 20.8, whereas the experimental group did not achieve 19. This revealed that both groups had low skill levels before the intervention application began among the respondents in the experimental group. The control group's pretest performance received a transmuted grade of 76%, indicating that it met expectations. Conversely, the experimental group's performance in the posttest yielded a transmuted grade of 73.75%, indicating a failure to meet expectations. The groups differed in terms of test scores, in favor of the control group.

**Posttest scores of the control and experimental groups:** Table 3 shows the posttest scores. The control group got a score of 21.13, while the experimental group got a score of 25.4. Table 3 shows respondents' levels of success in implicit teaching during the posttest. The control group's posttest performance met expectations, with a transmuted grade of 76.41%. Conversely, the experimental group's performance in the posttest yielded a transmuted grade of 81.25%, surpassing expectations. The groups differed in terms of test scores, in favor of the experimental group.

**Significant difference between the pretest and posttest scores of the experimental group:** Table 4 illustrates the control group's pretest and posttest scores. The study used a paired t-test to determine if the control group's pretest and posttest significantly differed, with a mean pretest of 20.8, a mean posttest of 21.13, and a p-value of 0.256 indicating no significance. This indicates a no significant boost in student learning compared to earlier studies. This suggested that the students' overall attitude towards the subject was quite positive.

**Significant difference between the pretest and posttest scores of the control group and the experimental group:** Table 5 shows the experimental group's pretest and posttest scores. They used a paired t-test to evaluate if the pretest and posttest scores of the experimental group differed significantly. The mean is 19, and the mean posttest is 25.4 with a statistically significant p-value of 0.000. Students who receive clear instructions have a positive attitude toward the subject. This indicates that their experience with the intervention was extremely good and increased their learning, as evidenced by the post-test score.

**Table 3. Posttest**

Posttest	Number of students	Mean	Class proficiency	Competency level
Control Group	30	21.13	42.26	Success
Experimental Group	30	25.4	50.8	Surpassing expectations

**Table 4. Results of Pretest and Post-test in Control Group**

Control Group	Mean	t-value	p-value	Remarks
Pretest	20.8	-1.159	0.256	No Significance
Post test	21.13			

**Table 5. Results of Pretest and Post-test of Experimental**

Experimental	Mean	t-value	p-value	Remarks
Pretest	19	-12.930	0.000	Significance
Post test	25.4			

**Table 6. Filipino Subject**

Posttest	Mean	t-value	p-value	Remarks
Control Group	21	-4.867	0.000	Significance
Experimental Group	25.4			

Table 6 shows the mean score of the posttest in the control and experimental groups. We conducted an independent t-test to determine if there was a significant difference between the posttests of the control and experimental groups. The control group's mean posttest is 21, whereas the experimental group's mean posttest is 25.4. The p-value is 0.000, which is greater than 0.05. This indicates its importance in teaching differentiated instruction for academic performance.

#### **4. CONCLUSION**

In the pretest, the majority of respondents from the control group and the experimental group scored below the passing score. The findings indicated that both groups needed an intervention because they performed poorly during the pretest. This suggests that we need to facilitate students' learning with appropriate interventions to help them succeed academically. We assume that the intervention will lead to an improvement in the students' performance in the Filipino subject. We cannot entirely blame the students for their poor output, as the teaching-learning process is the primary cause of their performance. The standard of teaching by the Filipino native teacher and the reliability of the students' responses to the teaching are responsible for the students' poor output. Therefore, teachers should prepare and incorporate interventions that improve student outcomes [14].

The t-test for the dependent sample, tested at the 0.05 level of significance, revealed that using the interview method did not significantly improve the students' performance. This indicates that the interview method has not been successful in improving Filipino students' performance. Despite being considered a traditional approach, the interview method does not significantly impact students' learning, as evidenced by their low grades. The findings support the idea that the interview method can improve students' focus on the learning content when all other factors are under control.

On the other hand, in their posttest, the Filipino performance in the differentiated instruction of the experimental group showed a significant improvement from 73.75% (expectations not met) to 81.25% (prospects met). This indicated that the use of differentiated instruction in Filipino teaching was effective in improving students' performance. This further indicated that the

forementioned strategy successfully facilitated students' learning. The discussion underscores the effectiveness of differentiated instruction as a student-centered approach, supporting the results. This approach facilitates improved motivation in students to learn the subject and ultimately improves their performance [15-18].

On the other hand, the teaching of the Filipino subject revealed that the students exhibited a positive attitude towards the subject, particularly in terms of their ability to express themselves during class. We can conclude that the students have had positive experiences with self-expression. Therefore, we can conclude that the students are satisfied with their studies. Students' perceived satisfaction measures the effectiveness of learning. Further, the findings pointed out that there is a statistically significant relationship between the extent of learning and the attitude of students.

#### **5. RECOMMENDATION**

Based on the available evidence, the researcher comes to the following conclusions:

Differentiated instruction is based on the uniqueness of learning in terms of content, process, and product, as determined by students' needs and learning styles. The topic of instruction refers to what students should master or learn, the process denotes how they must complete the learning topic, and the product is the display or observation of this learning. Furthermore, the teacher presents content to students for learning purposes. This material is the same for everyone, following the curriculum created at the start of the school year. The process refers to the approach used, which includes many tactics and methods for achieving content learning. Here, the students are characterized by their learning style. Ultimately, the outcome hinges on the students' ability to acquire knowledge from the proposed material, utilizing essential student approaches, and evaluating its interpretation.

To teachers, give a diversity of texts and learning resources, use a variety of tailored learning methods and student assessments, and tailor instruction to multiple types of intelligence. Furthermore, professional development may be more effective when it incorporates opportunities for collaboration and differentiation to address the needs of individual teachers. Schools employ Learning Action Cell Sessions

(LACS) to promote collaboration during professional development.

Classroom observations can help schools enhance professional development and monitor the implementation of differentiated instruction. School can also use classroom observations, teacher evaluation, questionnaires, and focus group to determine the professional needs.

### DISCLAIMER (ARTIFICIAL INTELLIGENCE)

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc) and text-to-image generators have been used during writing or editing of manuscripts.

### CONSENT

As per international standards or universities standard, respondents' signed consent was the author(s) collected and preserved the materials.

### ETHICAL APPROVAL

The researchers followed and adhered to all of the criteria for conducting the study, including the assessment methodology and standardized criteria. Voluntary participation, privacy, confidentiality, and permission. The Assumption College of Nabunturan Ethics Review Committee's requirements for organizational/location and technology issues were strictly adhered to. The researchers gained certification for carrying out the investigation.

### COMPETING INTERESTS

Authors have declared that no competing interests exist.

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