

DIFFERENTIATED INSTRUCTION APPROACH AND MATHEMATICS
ACHIEVEMENT OF GRADE 5 LEARNERS: AN
ACTION PLAN

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In Partial Fulfillment
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Master of Arts in Education
Major in Administration and Supervision

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APPROVAL SHEET

This thesis entitled “*Differentiated Instruction Approach and Mathematics Achievement of Grade 5 Learners: An Action Plan*”, prepared and submitted by Kiezl Che Y. Lagare in partial fulfilment of the requirements for the degree of Master of Arts in Education, major in Administration and Supervision, has been examined and is recommended for acceptance and approval for an Oral Examination.

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ABSTRACT

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Differentiated instruction played an important role for the success in teaching mathematics in today's educational setting. This study explored the differentiated instruction approach and mathematics achievement of grade 5 learners that aimed to create an action plan that would maximize the application of differentiated instruction in teaching-learning process. In specific, this study also sought to determine the profile of the teachers in their highest educational attainment, teaching experience, number of relevant trainings attended, and strategies adapted; and the profile of the learners in terms of their sex, combined family monthly income, and mathematics grade for the third quarter.

Likewise, it explored the degree of effectiveness of differentiated instruction approach as perceived by the respondents as to connecting prior knowledge, considering learners' pace, and learning experience. Utilizing a descriptive method of research, the statistical treatments such as frequency counts and simple percentage, weighted mean, t-test, and Chi square were utilized. Results of the study showed further that the perceptions of the teachers and learners on the degree of effectiveness of differentiated instruction approach is significant. Moreover, findings revealed that the degree of effectiveness of differentiated instruction is statistically significant to the mathematics achievement of the learners. Despite its significance, there were challenges that hindered the development of mathematics achievement such as teachers faced challenges in applying differentiated instruction in the classroom on poor internet connectivity, classroom management issue, and learners' attitude towards learning. Hence, an action plan was proposed to address these gaps.

Keywords

Profile of the teachers and learners, Effectiveness of differentiated instruction, Mathematics achievement, Challenges encountered, Action plan

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DEDICATION

I dedicate all of these to our Almighty God, who has bestowed His blessings upon us in our daily lives. Special thanks for providing strength, courage, patience, wisdom, time, and guidance in bringing this study to fruition.

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CHAPTER 1

THE PROBLEM AND ITS SCOPE

This chapter discussed the introduction and the reasons why the researcher had chosen to investigate on differentiated instruction approach and mathematics achievement of the grade five learners. Likewise, the terms that were operationally used in this study were explained in this chapter.

INTRODUCTION

This section presented the rationale, theoretical background, statement of the problem and null hypothesis, and significance of the study. It described the researcher's major inspiration, which allowed her to conceptualize this important piece of work.

Rationale

This portion explained the overview of the topic being studied. International and local perspectives about differentiated instruction approach and mathematics achievement of grade 5 learners were respectively discussed herein. Moreover, the concerns and issues that still need to be addressed were presented in this portion.

Iasevoli (2023), explained that Differentiated Instruction (DI) contributes numerous benefits in the teaching – learning process. DI ensures that instruction provides learners with targeted support, inclusivity, and improves academic achievement. According to Tomlinson (2026), Differentiated Instruction Approach

means” tailoring instruction to meet individual needs”. Teachers can differentiate at least four classroom elements based on student readiness, interest, or learning profile. Thus, teachers have to consider the learning needs, the activities, and learning environment (Tomlinson, 2026).

Mathematics is an important subject that needs to be taught in all grade levels yet quite challenging (Segarino, et al., 2022). Students usually have anxiety and get bored while learning the subject (Rada & Lucietto, 2022). Hence, teaching strategies need to be modified by the math teachers and utilize approaches that reduces math anxiety and increases students’ engagement (Rada & Lucietto, 2022). Engelmann (2026) stressed that DI emphasizes well-developed and carefully planned lessons designed around small learning increments and clearly defined and prescribed teaching tasks.

In global stand, researchers Herner- Patnode and Jin Lee (2021) at The Ohio State University at Lima proved in their investigation that students’ performance have increased when teachers used differentiated strategies in teaching. It is found out in their investigation that using group activities is one of the most effective DI teaching strategies, but there are some limitations to consider.

Similarly, Russo, et al. (2021) at Sydney Australia, proved in their research that one means of supporting mathematics teachers become more sensitive to how the deep features of tasks can support differentiated instruction might be to empower them as learning designers. This is in consonance with Mellroth, et al.

(2021), who examined the power of positioning teachers as task designers to support differentiation.

In local perspective, Insorio (2024) at Binan, Laguna explored on integrating differentiated instruction to improve STEM students' mathematical engagement and academic performance, and confirmed the effectiveness of DI in the increased performance of students during the post test. Moreover, DI improved the student mathematical engagement behaviorally, cognitively, emotionally, and socially (Insorio, 2024).

Also, Magayon and Tan (2020) at Rizal, Philippines proved that DI affected the Mathematics performance of grade seven students using Maker's principles of differentiation on content, process and product, and embedding Tomlinson's principle in the teaching strategies and students' activities, considering students' readiness and interest.

Regardless the evidence that differentiated instruction (DI) can positively influence students' mathematics achievement, several gaps still exist. There is insufficient research detailing which particular DI strategies- such as flexible grouping, tiered assignments, or technology integration- are most effective for various aspects of mathematics learning, including conceptual understanding, procedural fluency, and problem-solving skills. Also, few studies examine the impact of DI across diverse cultural, socioeconomic, and linguistic backgrounds leaving questions about equity and access unanswered (Science Gate, 2025).

Philippines' result in the Trends in International Mathematics and Science Study [TIMSS], (2023) that was released on December 2024 showed that 80% of

grade eight students reached low benchmark. Considering this situation, the researcher is motivated to explore on differentiated instruction approach and mathematics achievement of grade five learners to determine whether the use of DI approach greatly influenced the performance of the learners in the researcher's school. Moreover, the researcher wants to determine the barriers that teachers met in using DI approach in teaching math and design an action plan that will aim to address these gaps.

Theoretical Background

This study was anchored on the policies and theories that highlights the relevance of utilizing Differentiated Instruction Approach in improving the mathematics achievement of the learners. This section examined the several legal background and theories that gave support on why there's a need to conduct this research and were arranged based on its relevance to the study.

Legal bases. The researcher had organized the connected legal basis according to its degree of importance in relation to the study conducted such as: Policy Guidelines on Daily Preparation for the K to 12 Basic Education (DO 42, 2016), Policy Guidelines on K to 12 Basic Education (DO 21, 2019) and Policy Guidelines on Classroom Assessment (DO 8, 2015).

Firstly, this study was supported by the *Policy Guidelines on Daily Preparation for the K to 12 Basic Education, (DO 42, 2016)*, which affirmed the role of the teacher as facilitator of learning. The policy is meant to support teachers in lesson planning to assist teachers in not only effectively managing instruction

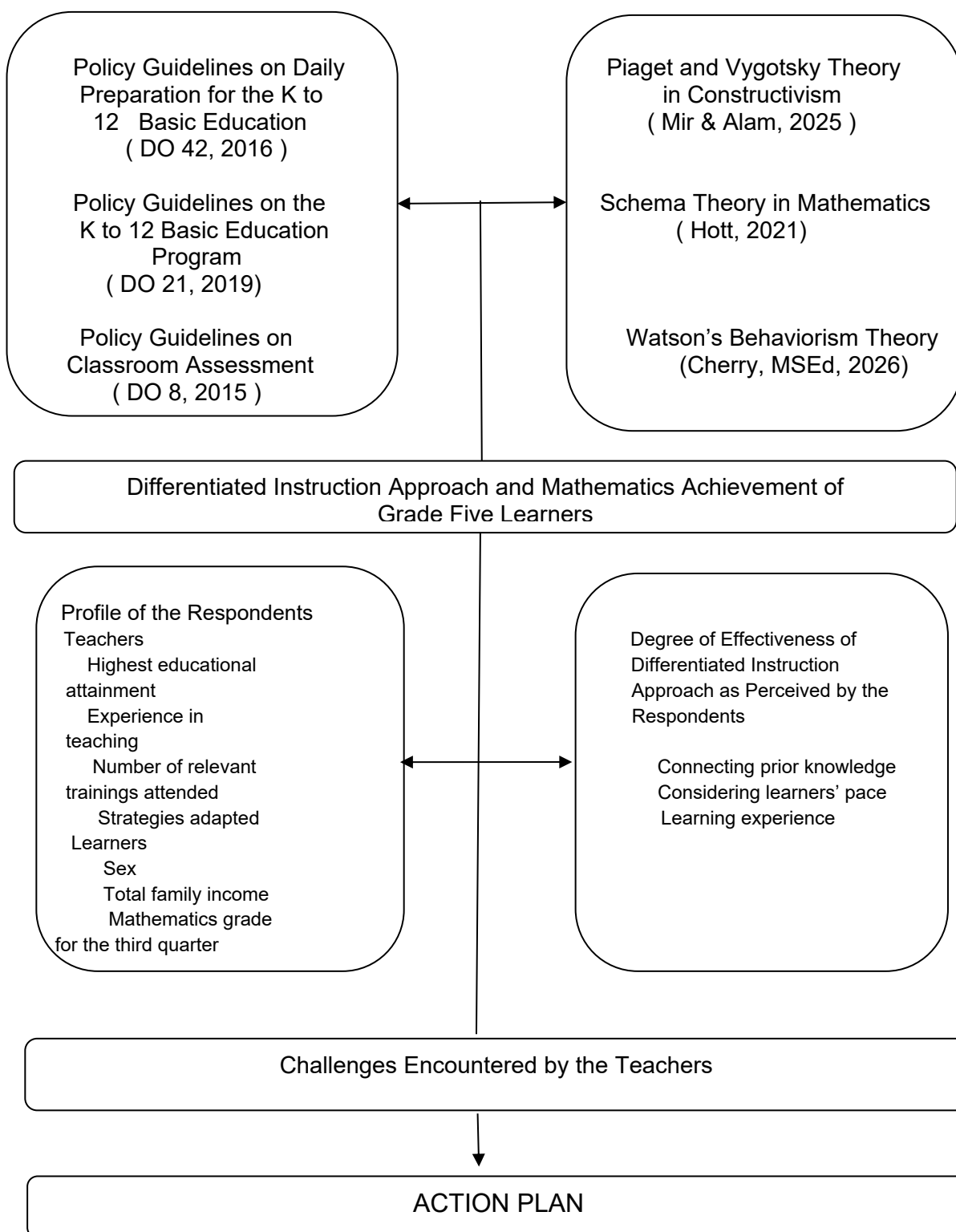


Figure 1: Schematic Diagram of the Theoretical Background

but also managing the performance of one of their core functions, which is to facilitate learning inside their classrooms (DO 42, 2016).

Teachers can then prepare strategies that help learners learn, build learners' understanding and respond to learners' needs by utilizing differentiated instructional strategies that consider learners' varying characteristics including cognitive ability, learning style, readiness level, multiple intelligences, gender, socioeconomic background, ethnicity, culture, physical ability, personality, special needs, and the different ways learners master the content of a particular learning area. This presupposes flexibility in the way a teacher plans lessons. This means that a teacher can prepare a lesson plan but must remain open to the possibility of adjusting instruction to respond to the needs of learners.

Furthermore, in planning lessons, teachers can choose from a variety of instructional models and their corresponding strategies and methods. An instructional model is a teacher's philosophical orientation to teaching. It is related to theories of learning including constructivism, social interactionism, and others. An instructional strategy is a teaching approach influenced by the abovementioned educational philosophies (DO 42, 2016).

Secondly, this study is anchored on the *Policy Guidelines on the K to 12 Basic Education*, (DO 21, 2019), which highlighted the use of pedagogical approaches that are constructivist, inquiry-based, reflective, collaborative, differentiated, and integrative. Differentiation takes into consideration which are significant aspects of their individual differences not only as learners but also as individuals. Thus, the curriculum shall be flexible enough to schools to localize,

indigenize and to enhance it based on their respective educational and social contexts.

Likewise, Inclusive Education (IE) is the core principle of the K to 12 Basic Education Program. This promotes the right of every Filipino to quality, equitable, culture-based and complete basic education. Through IE, all Filipinos will realize their full potential and contribute meaningfully to building the nation. The Enhanced Basic Education Program or K to 12 Basic Education Program responds to national and global community needs and demands through its mission to strengthen the values of the Filipino people, develop a strong sense of nationalism, develop productive citizens who contribute to the building of a progressive, just, and humane society, ensure environmental sustainability, and cultivate global partnerships for development.

The learner being the center of the teaching-learning process, the curriculum uses the spiral progression to ensure mastery of knowledge and skills after each level.

Lastly, this study is anchored on *Policy Guidelines on Classroom Assessment*, (DO 8, 2015), which explains that classroom assessment is an integral part of curriculum implementation. It allows the teachers to track and measure learners' progress and to adjust instruction accordingly. Classroom assessment informs the learners, as well as their parents, and guardians, of their progress. On the same manner, classroom assessment is a joint process that involves both teachers and learners. Appropriate assessment is committed to ensure learners' success in moving from guided to independent display of

knowledge, understanding, and skills, and to enable them to transfer this successfully in future situations. From this point of view, assessment facilitates the development of learners' higher-order thinking and 21st – century skills.

Classroom assessment maybe formative assessment and summative assessment. Formative assessment enables students to reflect on their own progress. According to UNESCO Program on Teaching and Learning for a Sustainable Future (UNESCO-TLSF), formative assessment refers to the on-going forms of assessment that are closely linked to the learning process. Summative assessment on the other hand, occurs at the end of a particular unit. This form of assessment usually occurs toward the end of a period of learning in order to describe the standard reached by the learners. In these assessments, learners can be assessed individually or collaboratively.

All of the legal bases cited in this research gave a stronger foundation for this study and on why this must be pursued.

Theories. This research was supported by different theories and philosophies such as: Piaget and Vgotsky Theory in Constructivism (Mir & Alam, 2025), Schema Theory in Mathematics (Hott, 2021), and Watson's Behaviorism Theory (Cherry, MSEd, 2026).

This study was mainly anchored on *Piaget and Vygotsky Theory in Constructivism*, (Mir, et al., 2025), which explained that Constructivism as a learning theory has significantly affected modern educational practice. Constructivism learning theory is developed by Piaget and Vygotsky which signifies the role of the teachers as facilitators of learning.

In Constructivism, learners are encouraged to think critically and enhanced their problem-solving skills using their background knowledge in connecting new lessons. Learners are considered to be the center in the teaching and learning process, thus learning is affected by internal and external factors (Mir & Alam, 2025).

Piaget and Vygotsky are two eminent figures in the development of constructivism theory and shared a common belief that classrooms must be constructivist environments. Piaget believes that students can work on collaborative projects, which may come in the form of a networked writing project, or the building of a separate phases of an engineering project that enables them to receive and give instant responses. Also, Vygotsky's constructivism is known as social constructivism because of the significance culture and social context. For Vygotsky, the zone of proximal development- the distance between the actual development of a child as determined by the independent problem solving, and the level of potential development as determined through problem solving under adult guidance or collaboration with more peers (Vygotsky, 1977; Mir & Alam, 2025).

Likewise, this study is rooted on *Schema Theory in Mathematics*, (Hott, 2021), which defined schema as a word problem -solving strategy that teaches students to identify problem types by focusing on the underlying structure of the mathematical situation. In *Schema Theory*, students are explicitly taught three problem structures for additive problems (i.e., requiring addition or subtraction) along with the core characteristics of each structure. Elaboration knowledge

requires students to schematically map the information presented in the word problems to the core features of the identified problem type.

Moreover, schema theory is an organized, structured unit of knowledge. It enables student to think faster and understand mathematical problems easily. It uses existing knowledge to connect the new lessons to understand how it is related. Fitting new experiences into existing schemas develops students' mathematical ability. Further, schemas are units of understanding that can be hierarchically categorized as well as webbed into complex relationships with one another. It underscores cognitive structures and processes for individuals to organize, interpret, and store information. In addition, it offers a more comprehensive cognitive framework elucidating how individuals organize, process, and interpret information from their environment. Schema activation occurs when a relevant schema is brought to the forefront of cognitive processing (Hott, 2021).

Lastly, this research was supported by *Watson's Behaviorism Theory*, (Cherry, MSED, 2026), which stated that Watson's Behaviorism is a psychological approach that focuses on observable behavior rather than thoughts or feelings. It denotes that all behavior is learned through interactions with the environment, mainly via conditioning- where actions are shaped by rewards, punishments, and associations.

Classical conditioning involves creating associations between a neutral stimulus and a naturally occurring stimulus while operant conditioning uses rewards and punishments to influence behavior. In education, behaviorism can be

used to help students learn like in designing differentiated activities that suit to the needs and interests of the students. Also, some teachers use consistent encouragement to help students learn (operant conditioning) while others focus more on creating a stimulating environment to increase engagement (classical conditioning) (Cherry, MSED, 2026).

In conclusion, all the theories mentioned in this study were helpful for the realization of this work as it signified the importance of considering the learners' learning pace particularly in Mathematics- which was considered by many students as a challenging subject.

THE PROBLEM

This study determined the degree of effectiveness of differentiated instruction approach towards mathematics achievement of the grade 5 learners at Gun-ob Elementary School, Division of Lapu-Lapu City, Cebu. Hence, results of the study were the basis in designing an action plan.

Statement of the Problem

Specifically, the study sought to answer the following queries.

1. What was the profile of the respondents' sectors in terms of:

1.1. Teachers

1.1.1. Highest educational attainment;

1.1.2 Experience in teaching;

1.1.3 Relevant trainings attended; and

1.1.4 Strategies adapted?

- 1.2 Learners
 - 1.2.1 Sex;
 - 1.2.2 Total family income; and
 - 1.2.3 Mathematics grade for the third quarter
- 2. What was the degree of effectiveness of differentiated instruction approach as perceived by the respondents' teachers and learners as to:
 - 2.1 Connecting prior knowledge;
 - 2.2 Considering learners' pace; and
 - 2.3 Learning experience?
- 3. Was there a significant difference in the perceptions of the teachers and learners?
- 4. Was there a significant relationship between the degree of effectiveness of differentiated instruction approach and the mathematics achievement of the grade five learners?
- 5. What were the challenges encountered by the teachers in implementing differentiated instruction approach?
- 6. Based on the findings of the study, what action plan could be proposed?

Statement of the Null Hypothesis

This section provided the null hypotheses of the study. The statistical treatment will be tested at 0.05 level significance.

Ho₁: There was no significant mean difference in the perceptions of the teachers and the learners.

Ho₂: There was no significant relationship between the degree of effectiveness of differentiated instruction approach and the mathematics achievement of the grade five learners.

Significance of the Study

This research would be significant in the field of teaching addressing the identified gaps in the use of game-based learning in enhancing performance of the learners in mathematics. This study would be beneficial to the following: Department of Education officials, learners, school heads, teachers, community, researcher, and future researchers.

Department of Education Officials. Through this study, the effectiveness of differentiated instruction approach towards mathematics achievement of the grade five learners will be determined. Thus, using the results of this study, higher officials will be guided in making policies and orders concerning the improvement of teaching-learning process.

School heads. School heads stand to benefit greatly from reflecting on the competency target garnered in this research. Recognizing competency gaps through the ratings assessment would guide our DepEd officials in designing support programs, allocating resources, and implementing initiatives tailored specifically, initiate school programs in utilizing differentiated instruction approach towards the mathematics achievement of the grade five learners.

Teachers. Teachers in public schools would be benefited from this study. Through identifying the competency gaps by means of the ratings assessment, teachers will be guided on what intervention programs, projects, or activities shall

be undertaken to further improve the performance of the learners in mathematics while utilizing differentiated instruction approach in teaching mathematical concepts.

Learners. The learners as the main respondents of this study would greatly benefit from this research. By implementing the proposed action plan, learners who are low -performers in mathematics will be given time to learn the lesson in accordance with learners' pace.

Community. The community would benefit tremendously through optimized partnerships between schools and stakeholders like parents and local organizations. Presenting advocacy bases to highlight infrastructure, curricular, and program needs aids decision-makers in cultivating support to the educational process in school.

The researcher. Conducting empirically grounded local studies enabled current researchers to engage meaningfully in evidence-based policy dialogues and advance the overall body of knowledge on reading literacy topics in the Philippines. The research design, methodologies, and lessons learned through this process strengthen the ability to design and implement rigorous investigations. Disseminating novel insights regionally maintains the field's dynamism by sparking new conversations important to scholars. Most importantly, output from this study will significantly guide the researcher to provide intervention programs and activities that will cater the diverse learning needs.

Future researchers. Serving as an initial baseline for future researchers, the findings and recommendations of this study would facilitate subsequent related

studies that build on its work. It guides deeper exploration of topics like exploring the efficacy of game – based learning and its impact on the performance of the learners.

DEFINITION OF TERMS

This section discussed the basic and important terms that were used in this study. Thus, it was operationally defined for better understanding of the readers in the following terms: action plan, challenges encountered by the teachers, degree of effectiveness of differentiated instruction, and profile of the respondents.

Action plan

This pointed out the expected output of this study. It consists of the areas of concern, activities, time frame, and resources needed including human and financial resources.

Challenges Encountered by the Teachers

This statement depicted the difficulties that teachers met in implementing differentiated instruction approach.

Degree of Effectiveness of Differentiated Instruction

This referred to the effectiveness of differentiated instruction approach as perceived by the teachers and the learners in terms of connecting prior knowledge, considering learners' pace, and learning experience.

Connecting prior knowledge. This referred to the ability of the learners in recalling the previous lessons or relating the previous lessons to the new ones.

Considering learners' pace. This referred to how teachers provide varied activities to different sets of learners. Likewise, it depicted on how learners respond to the activities provided to them and how the activities suited to their level, interest, and learning style.

Learning experience. This referred to how learners actively participated on the learning activities.

Profile of the Respondents

This phrase referred to the demographic profile of the teachers and the learners.

Profile of the Teachers

This referred to the background of the teachers in terms of highest educational attainment, experience in teaching, relevant trainings attended, and strategies adapted.

Highest educational attainment. It described the highest education that the teachers have achieved.

Experience in teaching. This referred to the length that the teachers have served in DepEd.

Number of relevant trainings attended. It depicted to the trainings that teachers attended relevant to the topic being studied.

Strategies adapted. These were the activities and techniques that teachers utilized in teaching the lesson.

Profile of the Learners

This pointed to the background of the learners in terms of sex, total family income, and mathematics grade for the third quarter.

Sex. This referred to the respondent whether a male or a female.

Total family income. This referred to the amount of money that the family earned in a month.

Mathematics grade for the third quarter. This pointed to the grade point average that the learners got in mathematics during the third quarter.

CHAPTER 2

RELATED LITERATURE AND STUDIES

Various literature and studies were reviewed and specifically discussed in this chapter. This chapter introduced literature and studies taken from authors or researchers around the globe, including the Philippines.

RELATED LITERATURE

The review of various related literature was presented in this section, citing foreign and local authors. With this review, it provided a stronger claim on the topic being studied and provided new findings and insights that were relevant in the utilization of differentiated instruction approach towards mathematics achievement of the learners.

Foreign

The review of related literature from foreign sources gives the researcher various pieces of information of what is currently known about the topic in a context outside the Philippines. This review provides an assurance that the researcher is familiar with the current developments in the topic from around the world thereby, establishing a novel research study.

Definition of differentiated instruction. Tomlinson (2026) defined Differentiated Instruction as differentiation consisting of the efforts of teachers to respond various kinds of learners in the classroom. Teachers can differentiate at

least four classroom elements based on student readiness, interest, or learning profile.

Content must be differentiated at the elementary level like using reading materials at varying readability levels, putting text materials on tape, presenting ideas through both auditory and visual means and meeting small groups to re-teach an idea or skill for low-performing learners, or to extend the thinking or skills of advanced learners (Tomlinson, 2026).

Best (2020), defined Differentiated Instruction as the process of adapting learning experiences to cater to students of mixed ability. To meet the needs of different students, a teachers might differentiate their actual subject matter of their teaching, teaching strategies and methods, results, and environment.

Importance of differentiated instruction in the classroom. Ivory (2022), highlighted the importance of differentiated instruction in the classroom. “Differentiation is more than an instruction, thus teachers should differentiate activities based on learners’ readiness, interests, or social styles. The meaning of differentiation can vary among educators, and how teaching is differentiated can depend on many factors, such as grade level and subject.

The utilization of DI can improve students’ performance, increases engagement, promotes inclusivity, and informs teachers. Differentiated Instruction provides a variety of entry points, so students who may seem to struggle with a skill or concept might provide teachers with more insight when asked to practice the skill or concept differently (Ivory, 2022).

Furthermore, Best (2020) stated that the range of abilities and student learning styles has been further widened by the move to inclusive education. Increasingly, mainstream classrooms are home to students who might previously have occupied special programs like students with psychological or behavioral disorders, gifted students, students with physical disabilities, students from different linguistic backgrounds and students with cognitive or learning disorders (e.g. dysgraphia, dyslexia).

Strategies and examples of differentiated instruction. Haas (2024) enumerated different strategies and examples of DI such as: using task cards, interviewing students, targeting different senses within lessons, sharing one's strengths and weaknesses, using think-pair-share strategy, journaling, implementing reflection and goal-setting exercises, running literature circles, free study, grouping students with the same learning styles, open-ended projects, using Math EdTech that adjusts to each student, relating math to personal interests and everyday examples, playing a math-focused version of tic-tac-toe , and creating learning stations without mandatory rotations.

Accordingly, Simpson (2025), stated that regardless of grade level, every classroom has students with different needs and ability levels. Differentiated instruction is important for students because it recognizes and supports their diverse learning needs and abilities, which can enhance their engagement, motivation, achievement and overall well-being. Teaching to the “average” works for some students sometimes, but is rarely enough to support every learner (Simpson, 2025).

Differentiation approach in education tailor instruction for diverse learning needs. Goyibova, et al. (2025), highlighted that by adapting instruction, content, and assessment to meet the needs of various learners, differentiation in education improves student engagement and accomplishment.

“Differentiation addresses students’ varied learning styles and strengths by utilizing the many intelligences theory to customize instruction, content, and evaluation” (Goyibova, et al., 2025). Thus, in order to address the varying needs of students, foster inclusion, and improve academic achievement, differentiation in education is crucial.

Learning environment must be differentiated. Best (2020), stressed that learning environment must be differentiated. The classroom environment itself can be differentiated to meet the needs of different learners. There are students who like learning actively with talk and movement, while others prefer quiet, independent work. Combining collaborative zones with spaces for independent and quiet work is important. Classroom management strategies allow everyone to adjust aspects of the environment as you need.

Mathematics provides opportunities for all using differentiated instruction. Ironside (2025), stated that the first gear of engagement in math class is usually sharing solutions. Through collaboration, students receive support from one another that is different from the support they would get from adults. In order to have true collaboration, kids need protocols and practice.

Likewise, using flexible groups and offering a range of problems, most students find that some skills and standards pose a greater challenge than others.

This means that for each skill or standard, kids will need a different level of instruction. Grouping decisions are best made in the moment, which means that teachers need to know their students and be prepared with a variety of tasks and learning opportunities (Ironsides, 2025).

Hidayati (2020), stated that differentiated instruction is an approach that can be used to facilitate students with various characteristics and help them to master mathematics in every topic learned. Implementing the lessons using differentiated instruction in different topics, peer-reviewed, and peer-presented in a real classroom. Different students' progress in mastering some topics in the classroom often happens. It also occurred in the mathematics classroom because the teachers use the same method for all students' type. Differentiation in instruction addresses a wide range of learning needs and interests.

Why differentiation is challenging. Best (2020), pointed out several challenges in the implementation of differentiation such as lack of administrative support, fear of straying from the curriculum, logistical challenges, time spent planning, and parental resistance.

Nurlankyzy and Elmira (2023), cited challenges in implementing differentiated instruction including insufficient time, inadequate professional development programs and administrative support to facilitate differentiated instruction.

Adare, et al. (2023), pointed large class size, stakeholder commitment, and the lack of professional training hinder teachers from using differentiated instruction in the classroom.

Lastly, Lesson Seed (2024), stated that DI is a powerful teaching approach that can transform the learning experience for students, but it's also challenging. Challenges like time constraints, chunk planning and routine building, large class-size, lack of resources, curriculum constraints, classroom management, teacher burnout, and student resistance hinder the implementation of differentiated instruction in the classroom.

Local

The review of related literature from local sources provided the researcher an excellent perspective of what was currently known about the topic within the Philippine setting. This review guided the researcher in adding something new to the field of study within the country without duplicating previous efforts.

Introduction to differentiated instruction in Philippine Math Education.

Magayon and Tan (2020), emphasized that differentiated instruction emerged as a significant pedagogical strategy in Philippine basic education system particularly in addressing diverse learner needs within mathematics classrooms. Under K to 12 curriculum, Filipino mathematics teachers are encouraged to differentiate learning activities – modifying content, process, and assessment to match students' readiness, interests, and learning profiles. Although implementation varies, the increasing inclusion of differentiated instruction reflects a shift toward more responsive and inclusive math teaching practices in the Philippines.

The necessity of implementing differentiated instruction in the classroom.

Llego (2022), pointed out reasons why is it necessary to implement differentiation in Philippine classrooms. First, it allows all students to reach their fullest potential

in the classroom. Unlike in traditional classroom setting, students who are not “high-achievers” can often feel lost or bored. Second, differentiated instruction helps teachers assess and identify the needs of each student by providing different tasks and activities suited to each student’s abilities. Lastly, differentiated instruction helps improve academic achievement for all students.

Benefits of using differentiated instruction. Llego (2020), cited many benefits to using differentiated instruction. One advantage is that it allows teachers to cater to the individual needs of each student as every student has different learning pace. In the same vein, differentiated instruction can help improve student motivation. When students feel they can learn in a way that suits them, they are more likely to be motivated to learn. Also, DI can help to improve classroom behavior. Thus, in totality, differentiated instruction can have a positive impact on both teachers and students.

Enhancing learning through differentiated instruction. Ferrer and Naanep (2025), emphasized that as individual needs of the learners vary, they need to tailor their learning to meet diverse, unique demands. Thus, various differentiated instruction techniques must be applied to increase students’ engagement and motivate them to participate actively. Some of the techniques are hands-on exploration, varied instructional materials, visual aids, graphic organizers, and scaffolded tasks.

Differentiated instruction using product approach in different learning areas. Comon, et al. (2021), cited that DI is a curriculum framework that focuses on the

individual student. Students achieve because teachers develop lessons to the students' readiness levels, interests, and learning styles.

Differentiated instruction is an activity-driven to education that guides learners through a subject or course using a variety of project, tasks, or problem-solving activities to choose from. This educational approach has been the norm in K to 12 classrooms for generations. While integrating scaffolding strategies is centered around the class as a whole, providing structures to clarify learning objectives, differentiated instruction provides individual learners with specific steps towards taking control of their learning experience (Comon, et al., 2021).

Differentiated instruction for teaching basic reading comprehension. Suson, et al. (2020), noted that differentiated instruction has been a buzz word in Philippine education for many years. Educators utilize differentiated instruction approach in teaching to maximize and meet the expected learning outcome. The utilization of DI is widely applied in various subjects and in the development of skills like basic reading comprehension skills. In teaching basic reading comprehension skills using DI, some strategies to be used are guided reading, noting details, sequencing events, and getting the main idea and predicting outcomes.

Differentiated instruction as an effective teaching strategy. Antonio (2024), stated that one prominent approach gaining traction is the implementation of differentiated instruction. With its focus on recognizing and accommodating diverse learning styles and abilities within the classroom, this method empowers educators to tailor their teaching to meet the unique needs of each student.

Additionally, differentiated instruction and technology integration promote a student-centered approach that is vital in Philippine classroom setting. By shifting the focus from traditional teacher-led instruction to student-centered learning experiences, students are empowered to take ownership of their learning journey (Antonio, 2024). Moreover, fostering a supportive and nurturing environment where students feel valued, respected, and encouraged to express their ideas foster a positive classroom culture conducive to academic growth and personal development (Antonio, 2024).

Differentiated instruction and mathematics achievement of learners.

Differentiated instruction is linked to the improved performance of students in mathematics. For instance, students exposed to differentiated instruction tend to get higher scores compared to those using traditional teaching methods. Budejas (2025) stated that differentiated instruction greatly helps in the improvement of students' performance in mathematics as they were able to be engaged in activities suited to their readiness levels and learning preferences. As learners became more actively involved in the learning process when lessons were tailored to their abilities and interests (Insorio & Librada, 2024). Furthermore, addressing learner diversity through differentiated instruction is appropriate (Insorio, 2024).

The use of differentiated strategies is used in teaching Statistics and Probability, students' cognitive, behavioral and emotional engagement which enhances academic outcomes but also fosters positive learning attitudes, which are crucial in mathematics where low engagement often links with poor performance.

Challenges teachers face when implementing differentiated instruction.

According to Llego (2020), one of the challenges that teachers face when implementing differentiated instruction is ensuring that all students are being adequately challenged. Another challenge is meeting the needs of all students, which can be difficult when there is a range of abilities in one classroom. And, teachers must be well-prepared to differentiate instruction which requires time and planning.

Likewise, Suarez and Caballes (2022), noted that one of the major challenges is the insufficient training of teachers in differentiated instruction. Many educators lack adequate knowledge and skills to apply differentiated strategies effectively. Teachers demonstrated limited competence in designing differentiated activities due to inadequate professional development opportunities (Suarez & Caballes, 2022). Similarly, Callangan and Caballes (2021) stated that teachers struggle to design multiple instructional materials due to insufficient planning time.

Moreover, according to DepEd (2022), an overcrowded classrooms limit teachers' ability to provide individualized instruction. Large class size is another major barrier. Public school classrooms in the Philippines have more than 40 students, making it difficult to address individual learning needs. Furthermore, lack of instructional resources affects teacher's ability to design varied learning activities (Suarez & Caballes, 2022).

Lastly, Insorio (2024), highlighted barriers such as extensive preparation time and classroom management, pointing to the need for systemic support for teachers implementing differentiated instruction.

Synthesis

Putting together the reviewed literature from international and local sources, it clearly stressed the importance of differentiated instruction in teaching particularly in mathematics. Several authors affirmed that differentiating activities in teaching caters every learner's needs and interests thus no one is left behind. Aside from that, differentiated instruction approach fosters inclusion which is relevant to the educational setting of today since Inclusive Education [IE] is given significance by the DepEd.

However, despite the benefits that both teachers and learners gained from utilizing differentiated instruction approach there are still barriers that hinder its full and consistent implementation. Long -time preparation of activities and instructional materials, large class size, limited learning space , and insufficient instructional resources are some of the several factors that challenge teachers to implement differentiated instruction approach all the time.

RELATED STUDIES

Reviewing related studies helped the researcher understands the topic under study better for it clarifies vague points about the problem. It also guided the researcher in making comparisons between her findings and the findings of other similar studies. By going through enough number of reviewed materials paved the way to new insights and perspectives about the recent trends of the research problem, thereby providing the researcher with fresh and up-to-date ideas in coming up with inferences, conclusion, and recommendations.

Foreign

The review of related studies from foreign sources provided the researcher the perspective of the global contexts. It enabled her to look at her study in the lens of the global arena. On this note, it made the study even more meaningful and relevant in the current times for it considered not only the local setting, but the whole world in the greater scale.

Improving students' mathematical problem-solving ability using differentiated instruction approach. Fatimah, et al. (2022) revealed in their study at Vocational High Schools in Deli Serdang Regency, North Sumatra that problem-solving abilities are crucial in mathematics. Using the sampling technique with cluster random sampling, it showed that there was an increase in mathematical problem-solving abilities of students who receive learning using the differentiated instruction compared to those who received direct learning.

Somma and Horne (2025), also affirmed in their study that one of the most compelling aspects of multisensory mathematics instruction is its potential as differentiation strategy. It showed that by incorporating visual, auditory, tactile, and kinesthetic elements into mathematics lessons, educators can create a more inclusive learning environment that addresses the unique needs of each student.

Further, it is concluded in the said study that multisensory instruction represents a powerful, research-grounded approach to mathematics education that bridges theoretical foundations with practical applications. Thus, students demonstrated an improved retention, problem-solving abilities, and motivation when applied with differentiated instruction approach (Soma & Home, 2025).

Maryani & Riyadi (2025), also confirmed in their study that students learned more in mathematics and had high engagement when applied with differentiated instruction approach.

Moreover, according to Hidayati (2020), it is concluded in his study that “a long process in implementing differentiated instruction approach succeeds in making students enjoyed the learning process and achieve the learning goals through their different ways of teaching as it showed in the study’s result that teachers are collaborated in developing and implementing differentiated instruction in the mathematics classroom for every topic they have chosen. Study’s result also showed that steps in implementing differentiated instruction, namely pre-lesson planning, lesson planning, peer teaching, real teaching, and reflection, are the process of helping the students learn” (Hidayati, 2020).

Lastly, Herner-Patnode and Jin Lee (2021) presented in their study that differentiation strategies and responsiveness of the differentiation. Findings of the study suggested that there’s a need to pay more attention to discussing how general theories should be applied to a specific classroom and school context and spend more time practicing responding to specific students’ needs and backgrounds.

Using station rotation to engage students in meaningful math work. Schembari (2025), supported in his research that using learning stations enhances learning. It is proven that aligning station activities with grade-specific mathematical concepts and skills ensures targeted, dynamic, and impactful instructional opportunities for all students during extended periods.

“The research undergone in a 45 to 50 minutes class, teachers have confidently implemented four cycles of four learning stations about ten minutes each duration. During cycle one, the teacher works with a focused reteach cohort or support cluster. During cycles two to four, after the initial reteach, reteach students were integrated back into the mixed-ability or heterogenous groups – A, B, C, D. “(Schembari, 2025).

Impact of differentiated instruction on the academic performance of students. The study of Vakolia, et al. (2025), determined the effectiveness of differentiated instruction and their impact on the academic performance, motivation, and independence of primary school students. Employing a Wechsler Individual Achievement Test -4, Academic Motivation Scale, observation and the methods of statistical analysis, the result showed that the average student motivation scores on the Academic Motivation Scale increased from 3.2 to 4.1 after the implementation of differentiated instruction, while student autonomy assessed on the Student Satisfaction Inventory, increased from 3.2 to 4.0.

It is further concluded that implementing differentiated instruction also proved effective in improving academic performance, as evidenced by an increase in the students’ average score from 65 to 80.

Fousteri and Foti (2024), also explored on differentiated teaching having early childhood education students as respondents. Results of their study confirmed that based on the modern pedagogical practices of differentiated instruction and project, a productive program, experimental, group-centered,

based on co-construction, search, observation, exploration, free expression, joy, cooperation, and dialogue was carried out.

Moreover, it is proven that using differentiated instruction enabled children to have an opportunity to use multiple intelligences, develop their talents, improve their weaknesses, cultivate their social skills, and, in general, develop all-round (Fousteri & Foti, 2024).

Furthermore, Krishan and Al-rsa'i (2023), investigated the effect of technology -oriented differentiated instruction on motivation to learn Science. Using a quasi-experimental approach, the study's result showed that the students interacted with the technology -oriented differentiated instruction approach, as it is a new method for students that meets the desires of all students, and differs from the usual methods of teaching. Likewise, the study concluded that "distributing plans and guides for differentiated, technology-oriented teaching to schools, to enable teachers to use them and make use of them in science education is necessary "(Krishan & Al-rsa'i. 2023).

Lastly, Pozas, et al. (2020) explored the effectiveness of differentiated instruction in addressing students' diversity. Using sampling technique, the result revealed that the mixed ANCOVA indicates that the contextual factors have an influencing role on teachers' use of differentiated instruction practices. Specifically, the tests of between-subject effects of the mixed ANCOVA results reported a significant main effect of school track , $F(4, 828)=5.99$, $P<0.001$, partial $\eta^2=0.03$.

Local

The review of related studies in the local contexts provides a clearer direction of the current study. Using the lens of local setting enables the researcher to see the contextualization of the topic. This contextualized view of the study paves the way to design a more relevant action plan that will cater to the needs and present situations of the target respondents.

Differentiated instruction on academic performance of students. A study of Piniranda and Sario (2024), at Nabunturan, Philippines, utilized a purposive sampling to identify its respondents. Using a researcher-made questionnaire to collect the necessary data in the pretest and posttest, 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.

It is concluded in the said study that “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” (Piniranda & Sario, 2024).

Likewise, Peralta, et al. (2025), assessed the effectiveness of differentiated instruction and found out that the use of diverse instructional materials, provision of learning opportunities for self-paced learning and formation of groups to develop active participation suggested that in using differentiated instruction, teachers significantly establish wide array of learner-based learning

process and cater individual differences leading to the promotion of active engagement in the teaching and learning process.

In the same vein, results on the use of differentiated instruction in terms of content delivery, learning environment and assessment show that effective utilization practices on learning environment indicate that teachers are on the proper use of differentiated instruction. It also emphasized pedagogical nature and intent amidst of some indicators or areas needing strong improvement” (Peralta, et al., 2025).

Balita and Salvador (2023), examined the effectiveness of differentiated instruction in improving students’ academic performance and higher order thinking skills. Fifty students from San Isidro Integrated National High School participated by completing a questionnaire with a 45-item test covering three UCSP lessons. The research concludes that students lacked developed higher order thinking skills particularly in analyzing, which hinders their ability to achieve higher levels of thinking. Based on this finding, recommendations include students focusing on developing their analyzing, evaluating, and creating skills, and exploring their interests and learning styles. “Teachers should ensure proper execution of differentiated instruction, integrating a variety of activities that actively promote differentiated instruction” (Balita & Salvador, 2023).

Villaflor (2025), also explored the effectiveness of differentiated instruction on academic performance among elementary school pupils at Rizal, Philippines. A quasi-experimental research design was employed, involving two groups of elementary pupils: a control group (n= 25) and an experimental group

(n=25). Academic performance was measured using pretest and post-test assessments. The control group received traditional instruction, while the experimental group was taught using differentiated instructional strategies tailored to various learners' needs and abilities. Pre-intervention assessments indicated low academic performance in both groups. Following the intervention, the experimental group demonstrated a notable increase in mean post-test scores (21.74) compared to the control group (20.47). Findings also suggested that differentiated instruction significantly enhances academic achievement by accommodating diverse learning needs (Villaflor, 2025).

Ferrer and Naanep (2025), also investigated on the impact of differentiated instruction on students' learning at selected elementary schools in Tampakan, South Cotabato, for 2024-2025 academic years using a quantitative research design, which is descriptive and correlational, having grade four to six pupils and all teachers from ten schools as respondents.

Findings showed that differentiated instruction techniques, including hands-on exploration, varied instructional materials, visual aids, graphic organizers, and scaffolded tasks were highly implemented. "The pupils responded highly to differentiated instruction in motivation and engagement, with a section mean of 4.63. Additionally, the academic achievement of the respondents obtained a mean of 85.55, Science with the highest mean of 85.94, and Mathematics the lowest at 85.34. Hence, a moderate positive correlation was determined between the implementation of differentiated instruction and pupils' motivation, engagement, and performance in academic areas" (Ferrer & Naanep, 2025).

Challenges in implementing differentiated instruction. In the study of Ferrer and Naanep (2025), some challenges that hindered the implementation of differentiated instruction were identified such as time constraints, resource limitations, and classroom management highlighting the need for strategic support.

Hatmanto and Rahmawati (2023), explored attitudes and overcoming challenges in implementing differentiated instruction in the Philippines' English Language Classrooms. Using a mixed -method approach, combining both quantitative and qualitative data collection methods, the data gathered from the questionnaire showed that, in general, the Philippines teachers hold a positive attitude towards differentiated instruction in English language classroom contexts.

In terms of challenges, the respondents highlighted limited resources as a major obstacle and provided some alternatives in the interview. Thus, to address the issue of limited resources, teachers can investigate alternative resources such as online materials, open educational resources, and digital tools that are either free or have reduced costs (Hatmanto & Rahmawati, 2023).

Synthesis

In summary, the reviewed related studies from foreign and local authors highlighted the significance of differentiated instruction in the academic success of students. Several authors positively considered that utilizing differentiated instruction approach in teaching mathematics developed students' problem-solving skills and mathematical ability. Moreover, it is proven by numerous research in and out of the country that differentiated activities catered learners' diversity thus promoting a more learner-oriented environment, leading learners to

work their classroom tasks with utmost confidence and enhancing multiple intelligences. However, despite its evidence that differentiated instruction impacted on academic success of students, there were still obstacle that teachers encountered in the implementation of differentiated instruction such as limited resources and time constraints.

CHAPTER 3

RESEARCH METHODOLOGY

This chapter presented the research methodology employed, the target respondent-individuals being sampled, the environment, the statistical treatment that was utilized, and the gathering procedures done in order to generate the needed data to be analyzed and interpreted that made the basis in coming up with inferences and recommendations. It also showed the scoring procedure of the numerical data that provided the figures used for analyses and interpretations, paving the way to inferences, conclusion, and recommendations.

METHOD

This section presented and discussed the method that was utilized in this study. It described the details and importance of selecting the most appropriate method used in the research.

This study utilized the descriptive method of research. The descriptive method is the most popular approach since it enumerates the traits of a person, a group, or an environment. This type of research methodology is used by the researcher to get first-hand information from the outcomes of the respondents' evaluations, which help to generate logical and sound findings and suggestions for the study. This method describes the profile of the teachers in terms of their highest educational attainment, number of years in teaching and number of relevant trainings attended, and strategies adapted; and the profile of the learners in terms

of their sex, combined family monthly income, and mathematics grade for the third quarter.

The descriptive method focused on collecting and organizing numerical data across groups. It allowed the researcher to assess the degree of effectiveness of differentiated instruction approach as perceived by the respondents as to connecting prior knowledge, considering learners' pace, and learning experience. Hence, this enabled the researcher to generate knowledge and create a better perspective of the challenges encountered by the teachers in implementing differentiated instruction approach.

Hence, the results of the study were used as the bases in designing an intervention plan that would highlight the advantages of using game-based learning as a tool to improve performance of the learners in Mathematics.

FLOW OF THE STUDY

This portion showed the schematic representation of the flow of the research study. It started from the left going to the right. The uppermost box revealed the inputs, the middle box displayed the process, and the lowermost box exhibited the output of the study.

Input.

This phase of the study related to four variables where the first input showed the profile of the teachers in terms of their highest educational attainment, number of years in teaching and number of relevant trainings attended,

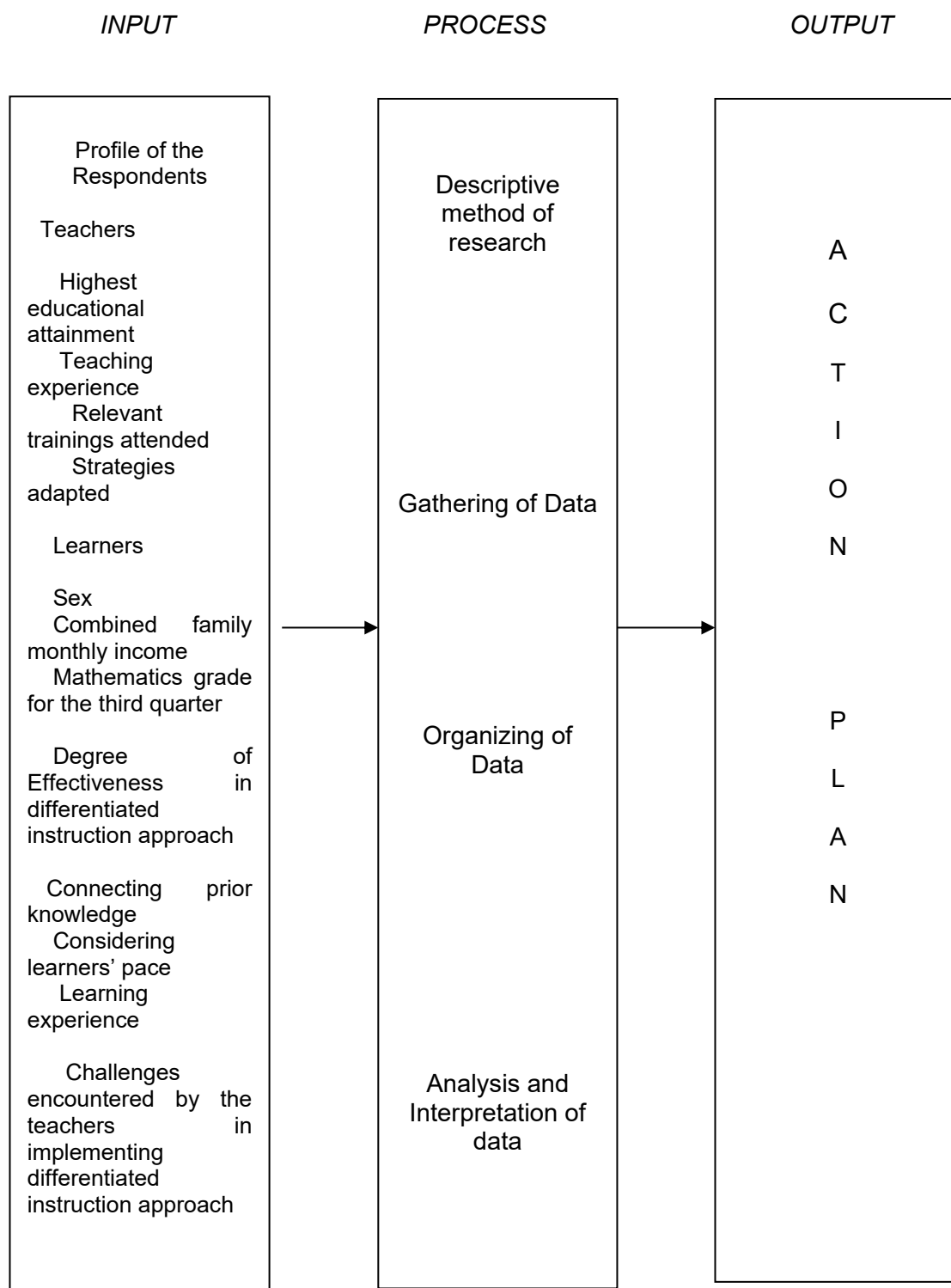


Figure 2. *Schematic Diagram of the Flow of the study*

and strategies adapted; and the profile of the learners in terms of their sex, combined family monthly income, and mathematics grade for the third quarter.

The second input referred to the degree of effectiveness of differentiated instruction approach as perceived by the respondents as to connecting prior knowledge, considering learners' pace, and learning experience.

The last input referred to the challenges encountered by the teachers in implementing differentiated instruction approach.

These variables were necessary data that serve as guide in crafting an action plan to address the gap in the effectiveness of differentiated instruction approach as perceived by the respondents.

Process.

The process phase started after all the necessary communications are approved. This phase included administration of questionnaires to the respondent groups. Research questionnaires intended for the learners, the parents, and teachers were personally distributed, administered, and retrieved by the researcher. After gathering all relevant data, results from retrieve questionnaires were tallied, tabulated, statistically treated, analyzed, and interpreted, and ended with the conclusions and recommendations.

Output.

The third phase depicted the outcome from the interpreted result of the study. A plan such as action plan, intervention plan and other aspects of study was

made into consideration. Hence, the output this study would be an action plan in that was based on the findings of the study.

ENVIRONMENT

The study was conducted in Gun-ob Elementary School among the grade one learners. This school was in Gun-ob, Lapu-Lapu City. It belonged to District 6, Division of Lapu-lapu City. Gun-ob Elementary School (GES), the lone public elementary school in Gun-ob, Lapu-Lapu City, was established in January 1964. It was located 1.8 kilometers away from the Lapu-Lapu City Division office and situated just at the side of the Lapu-Lapu City District Hospital and a few steps from Gun-ob Barangay Hall. It has a total land area of approximately nine thousand, two hundred thirty-seven square meters (9, 237 m²) acquired through donations.

The K to 12 Curriculum was used from Kindergarten to Grade Six in the delivery of instruction using the different strategies and methodologies which were developmentally appropriate for the learners.

It has 56 nationally funded teaching personnel. Among the 56 teachers, five (5) were Master Teacher I, twenty-eight (28) Teacher III and twenty-three (23) Teacher I. It has 17 buildings with 36 classrooms utilized by 54 classes. There were 26 classrooms with comfort rooms. The Grades One, two and three classes were observing shifting classes due to the shortage of classrooms. It has a computer room with 14 units of computers. The Home Economics building

MAP OF LAPU-LAPU CITY

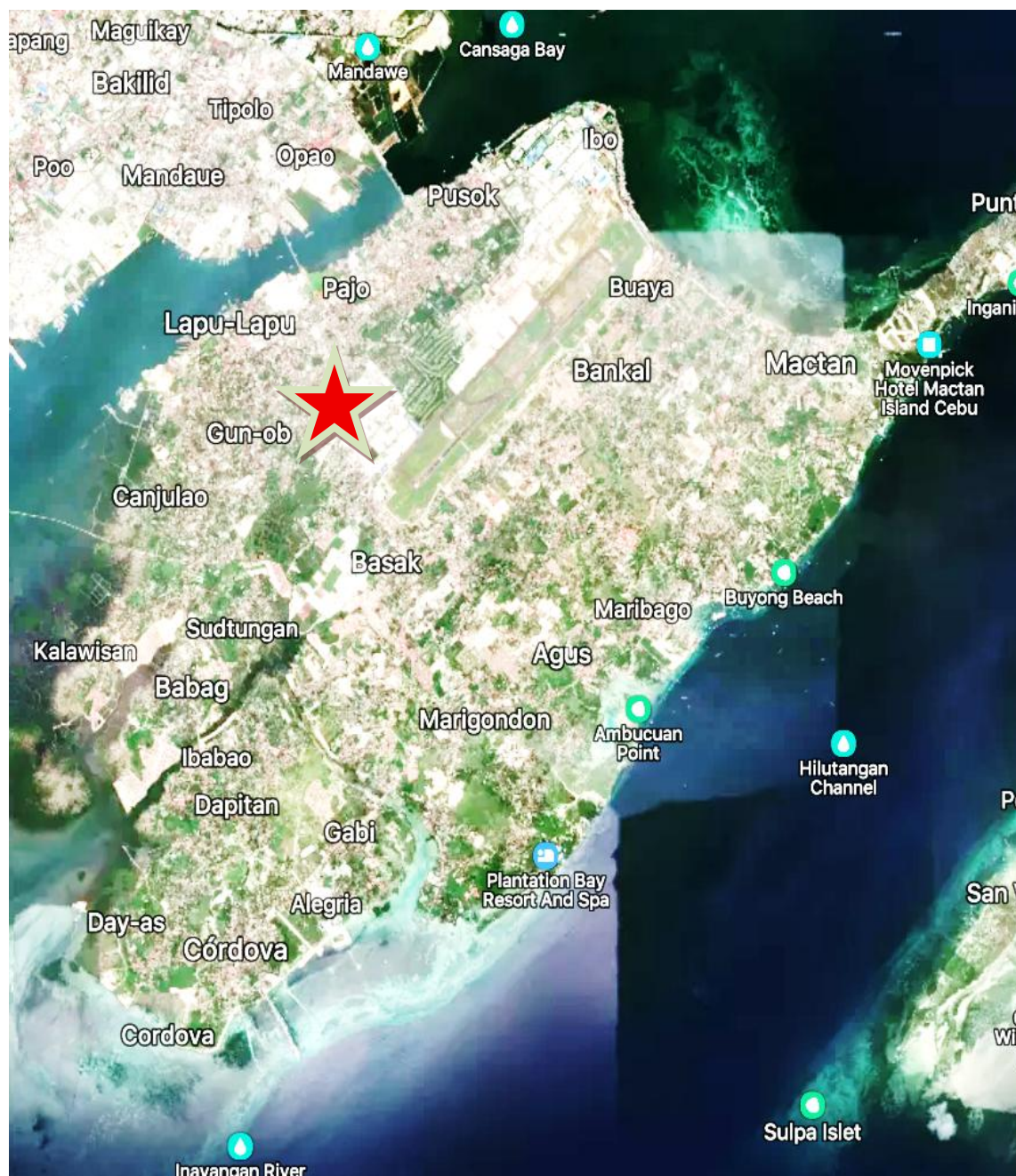


Figure 3: Map of the Research Environment

served as a multifunctional area school clinic and canteen, feeding area. It has 1 security guard and 2 utility workers funded by school MOOE and PTA voluntary donations. The school has a covered court and a stage that was partially damaged by Typhoon Odette, which needs to be repaired.

RESPONDENTS

This section discussed the sample frame and the target population. This described the sampling technique in obtaining the sample data in the research investigation. The researcher employed the population of all the 149 grade five learners, and 5 teachers-respondents of Gun-ob Elementary School, Lapulapu City Division in the school year 2025-2026. The number of respondents per group category were reflected in the Table 1.

Table 1

Distribution Profile of the Respondents (n= 154)

<i>Sector</i>	<i>Frequency (f)</i>	<i>Percent (%)</i>
Learners	149	96.75
Teachers	5	3.25
Total	154	100.00

Table 1 showed the distribution profile of the respondents. As reflected there are 149 or 96.75 percent of grade five learners, and five or 3.25 percent of

teachers as the target respondents of this study. It had a total of 154 or 100.00 percent respondents.

INSTRUMENT

This section detailed the formulation of the tool and the scoring procedure based on the tool used. It described the sequence of the tool used and the scoring procedure based on the problem sequence.

There were three sources of data to be studied. The first source was generated using a self-formulated tool. The second source of data was generated using the adopted tool from (Insorio & Librada, 2025) for the degree of effectiveness of differentiated instruction approach as perceived by the respondents. The third source of data was generated using the adopted tool from (Nurlankyzy & Elmira, 2023) for the challenges encountered by the teachers in implementing differentiated instruction approach.

Formulation

This section presented the procedures in designing the research instruments. These included the instruments on the profile of the teachers and the learners, degree of effectiveness of differentiated instruction, and the challenges encountered by the teachers in implementing differentiated instruction approach.

Part I utilized a self-formulated tool to gather data for the profile of the teachers in terms of their highest educational attainment, number of years in teaching and number of relevant trainings attended, and strategies adapted; and

the profile of the learners in terms of their sex, combined family monthly income, and mathematics grade for the third quarter.

Part II on gathering the data for the degree of effectiveness of differentiated instruction approach as perceived by the respondents as to connecting prior knowledge, considering learners' pace, and learning experience, an adopted tool from (Insorio & Librada, 2025) will be used.

Part III on gathering the data for the challenges encountered by the teachers in implementing differentiated instruction approach, an adapted tool from (Nurlankyzy & Elmira, 2023), will be employed.

Scoring

To identify the figures used for analyses and interpretation, the following scoring procedures were used. This guided the researcher on how to come up with a set of numbers that served as the basis in making inferences.

Part 1 on the profile of the teachers and learners, the researcher utilized the frequency counts and simple percentage.

Part 2 on the degree of effectiveness of differentiated instruction approach, the researcher utilized the adopted tool from (Insorio & Librada, 2025). The scoring guide was presented herein, weight, range, category and verbal interpretation.

Weight	Range	Category	Verbal interpretation
4	3.25 – 4.00	Highly Effective (HE)	The indicator greatly affected the performance of the learners
3	2.50 – 3.24	Effective (E)	The indicator moderately affected the performance of the learners

2	1.75 – 2.49	Less Effective (LE)	The indicator slightly affected the performance of the learners
1	1.00 – 1.74	Not Effective (NE)	The indicator has not affected the performance of the learners

Part 3 on the challenges encountered by the teachers in implementing differentiated instruction approach, an adapted tool from Nurlankyzy & Elmira, (2023), will be used. The scoring guide was presented as weight, range, category and verbal description.

Weight	Range	Category	Verbal description
4	3.25- 4.00	Highly Challenging (HC)	The challenges are always experienced by the teachers.
3	2.50- 3.34	Moderately Challenging(MC)	The challenges are frequently experienced by the teachers.
2	1.75- 2.49	Slightly Challenging (SC)	The challenges are sometimes experienced by the teachers.
1	1.00- 1.74	Not Challenging at All (NCA)	The challenges are not experienced by the teachers.

PROCEDURE

This section presented the ways and means in gathering the data needed for this scholarly work. Likewise, it detailed the different statistical instruments used for analyses and interpretation of data that would affirm the validity of this study.

Data Gathering

Prior to the administration of the research instrument, the researcher had asked an approval from the head of office where the research was conducted. The transmittal letter was presented to the school principals by the researcher seeking permission for the conduct of the research activity by distributing questionnaires to the respondents and to use the needed data that are stored in the office of the school guidance designate.

The researcher had personally gathered the secondary data from the school offices of the guidance office designate and administered the survey questionnaire to the respondent groups, and retrieved these questionnaires after the allotted time of the respondents' school. The responses that were elicited from the questionnaires were tabulated, analyzed, and interpreted

Statistical Treatment

In order to interpret quantitatively the results of the study, the following statistical treatments will be utilized, such as frequency counts and simple percentage, weighted mean, t-test, and chi square. The results of these statistical treatments will serve as basis in making interpretations, drawing inferences, conclusion, and recommendations.

Frequency count and simple percent. The statistical treatment was used to determine the number of responses by the teachers with regard to the profile of the teachers in terms of their highest educational attainment, number of years in teaching and number of relevant trainings attended, and strategies adapted; and

the profile of the learners in terms of their sex, combined family monthly income, and mathematics grade for the third quarter.

Weighted mean. The statistical treatment was utilized to determine the degree of effectiveness of differentiated instruction approach, and the challenges encountered by the teachers.

T-test Paired Sample. The statistical treatment was used to determine the significant difference in the perceptions of the teachers and learners.

Chi square. The statistical treatment was used to determine the significant relationship between the degree of effectiveness of differentiated instruction approach and the mathematics achievement of the grade five learners.

ETHICAL CONSIDERATIONS

Many ethical factors were considered when conducting the study. Respect for the research participants was the most important ethical principle that the study adhered to. The study's participants then established a basis for various ethical precepts. Voluntary participation, informed consent, anonymity, confidentiality, risk of harm, and results communication devoid of errors and plagiarism were among these principles.

Voluntary Participation

Participation in this project is entirely optional. Over the course of this study, participants may choose to discontinue participation at any time without feeling required or pressured to give a reason. The target participants were also informed that declining to participate would not have any negative consequences.

Informed Consent

The target participants signed an informed consent form before the study was conducted. They were oriented about the study's exclusive use for academic purposes as well as its advantages, potential risks, and the kind of data that would be collected.

Anonymity

The participant's information would remain anonymous to the researcher. Participant data should not be collected for a study unless it is crucial to the protocol of the study.

Confidentiality

The researcher ensured the confidentiality of the gathered data relative to the personal information of the respondents of this study and did not disclose to the public at any cause.

Potential to Harm

Accordingly, any relevant data or information of the respondents of this study should not be accessed, moved, or copied without the researcher's permission and the respondents' consent, since the Data Privacy Act (RA 10173, 2012) safeguarded the interests of the respondents or participants.

Results Communication is Free of Plagiarism and Inaccuracies

The researcher made certain that the manuscript contained no instances of plagiarism or research misconduct and accurately described the findings.

CHAPTER 4

PRESENTATION, ANALYSIS, AND INTERPRETATION OF DATA

This chapter presented the data collected based on the variables of the study. It included the presentation, analysis, interpretation and connected readings. Data included the profile of the teachers and learners, degree of effectiveness of differentiated instruction approach as perceived by the respondents, significant difference in the perceptions of the teachers and learners, significant relationship between the degree of effectiveness of differentiated instruction approach and the mathematics achievement of the grade five learners, and challenges encountered by the teachers in implementing differentiated instruction approach.

PROFILE OF THE TEACHERS AND LEARNERS

This section presented of profile of the respondents' sectors; for the profile of the teachers in terms of their highest educational attainment, number of years in teaching and number of relevant trainings attended and strategies adapted; and the profile of the learners in terms of their sex, combined family monthly income, and mathematics grade for the third quarter. It provided a detailed overview of the individual involved in this study.

The profile of the respondents' sectors was presented using the frequency count which were expressed in percent. This data was presented in the Table 2.

Table 2*Profile of the Respondents' Sectors*

Indicators	Frequency (f)	Percent (%)
<i>Teachers</i>		
<i>Highest Educational attainment</i>		
Doctoral decree	1	20.00
With MA units	4	80.00
Total	5	100.00
<i>Experience in Teaching</i>		
Ten years and above	1	20.00
Seven to nine years	4	80.00
Total	5	100.00
<i>Relevant Trainings/Seminars Attended</i>		
Ten trainings and above	1	20.00
Seven to nine trainings	1	20.00
Four to six trainings	3	60.00
Total	5	100.00
<i>Strategies Adapted</i>		
Games	5	100.00
Total	5	100.00
<i>Learners</i>		
<i>Sex</i>		
Male	81	54.36
Female	68	45.64
Total	149	100.00
<i>Total Family Income</i>		
P 25,001 to 30,000	16	10.74
P 20,001 to P 25,000	12	8.05

P 15,001 to P 20,000	48	32.21
P 10,001 to P 15,000	21	14.09
P 10,000 and below	52	34.90
Total	149	100.00

Mathematics Achievement for Third Quarter

Outstanding (O)	11	7.38
Very Satisfactory (VS)	36	24.16
Satisfactory (S)	52	34.90
Fairly Satisfactory (FS)	50	33.56
Total	149	100.00

Profile of the Teachers

This part provided the profile of the teachers in terms of their highest educational attainment, number of years in teaching and number of relevant trainings attended and strategies adapted.

Highest Educational Attainment

This section provided the profile of the teachers in term of their highest educational attainment. The data revealed that there were four or 80.00 percent of the teachers who have earned units in masteral degree, and one or 20.00 percent of the teacher who had earned doctoral degree.

This finding implies that majority of the teachers in the school has units in masteral degree which will significantly impact to the performance of the learners. The higher educational background of teachers will also increase the knowledge, strategies, and skills of the teachers in teaching their field of specialization. Moreover, teachers with advanced educational background will equip their knowledge and skills, and they become more effective in the delivery of the lessons

that is more motivating and engaging to the learners which will encourage the learners to study hard and always ready to their daily lessons, leading to better learner outcomes.

Bulilan (2022), concluded in his findings that the majority of the teachers met the minimum educational requirement for faculty positions in higher education institutions set by CHED, they are qualified to teach in college. Their rate of very satisfactory made them competent. Moreover, “findings revealed that there is significant correlation between teaching competencies and educational attainment. This means that the higher the educational attainment of the teachers, the more competent the teachers become”, (Bulilan, 2022).

Experience in Teaching

This portion highlighted the profile of the teachers in terms of their experience in teaching. The data revealed that there were four or 80.00 percent of the teachers had their length of experience in teaching ranging from seven to nine years, and one or 20.00 percent of the teachers who had their length of experience in teaching ranging from ten years and above.

The finding implies that the teachers assigned in the grade level varied in the number of years in teaching. The number of years in teaching is definitely not the basis for the assignment of teachers in the grade level. The assignment of teachers in the secondary level is based on its educational qualification and its major field of specialization. Further, it implies that teaching experience will make you a better teacher, and can help increase learners' achievement and attendance, and helps become an effective teacher as well. Thus, teachers play a vital role in

shaping the lives of the learners, influencing not only their academic achievement but also their personal growth and character development.

Masongsong, et. al. (2023), found that teachers' level of training was relatively low. In addition, it was crucial to remember that the study did not discover any appreciable variations in the level of trainings based on different profile variables like age, gender, educational attainment, number of years of teaching experience, and special education training. It was also found that there is a significant difference in the respondents' perceptions of the efficacy of instructional strategies according to age and years of teaching experience.

Further, it revealed that a strong link between teachers' perceptions of their effectiveness in fostering student engagement and their preparation for inclusive educational initiatives. It was also emphasized that the effectiveness of instructional strategies, classroom management, and training in inclusive education program, however, were not found to be significantly related. (Masongsong, et. al. (2023).

Number of Relevant Trainings Attended

This part denoted the profile of the teachers in term of the number of relevant trainings attended. The data revealed that majority of the teachers were three or 60.00 percent who had attended four to six relevant trainings, one or 20.00 percent of the teachers who had attended different number of relevant trainings or seminars ranging from seven to nine, and 10 and above, respectively.

The finding implies that the teachers need to attend training related to enhancing the capacity of teachers in teaching strategies on the improvement of

teacher' efficacy, and mathematics achievement of the learners. Thus, strategies and techniques in teaching and the mastery of the lessons can be acquired during training, seminar, and professional development of the teachers. Likewise, equip teachers' teaching skills and strategies, deeper learning and stimulating classroom environment that will also contribute to the improvement of the learners' achievement in mathematics.

According to Schwartz (2023), professional development is a part of every teacher's career. Thus, if it is attended to and done well, it provides teachers adequate knowledge and sharpen their abilities in teaching. Likewise, Sancar & Deryakulu (2021), maintained that teachers' professional development is important to improving learners' performance, since through this, teachers' professional life will be upgraded.

Strategies Adapted

This part highlighted the profile of the teachers in term of their strategies adapted. The data revealed that there were five or 100.00 percent of the teachers had their strategies adapted using differentiated instruction in teaching mathematics.

The findings imply that teachers integrate games as one of the strategies used in differentiated instruction in mathematics teaching. Further, implies that the students focusing on developing their analyzing, evaluating, creating skills, and exploring their interests and learning styles.

As supported by Hidayati (2020, it showed in the study's result that teachers are collaborated in developing and implementing differentiated instruction

in the mathematics classroom for every topic they have chosen. Study's result also showed that steps in implementing differentiated instruction, namely pre-lesson planning, lesson planning, peer teaching, real teaching, and reflection, are the process of helping the students learn" (Hidayati, 2020).

Profile of the Learners

This part provided the profile of the learners in terms of their sex, total family income, and mathematics achievement in third quarter assessment result.

Sex. This part presented the profile of the learners in term of sex. The data revealed that majority of the learners were males about 81 or 54.36 percent, while the female learners were 68 or 45.64 percent.

The finding implies that male learners in the class are greater than the number of females. This finding indicates that the class is predominantly compose of males, The distribution of learners may be influenced by local demographic enrolment trends. In addition, gender composition in education should ensure that instructional practices, participation and learning opportunities steadily inclusive and responsive to the needs of the learners.

Akpobome and Ajaja (2023), concluded that there was no statistically significant difference in the mean achievement score of male and female students, but there was a significant correlation between students' study habits, attitudes, and mathematics achievement. Additionally, revealed that students' study habits and attitudes, rather than their sex, affected their mathematics achievement levels.

Total Family Income

This part provided the profile of the learners in term of their total family income. The data denoted that majority of the parents whose total family income ranged below P 10,000 were 52 or 34.90 percent. The second highest total family income ranged from P 15,001 to P 20,000 were 48 or 32.21 percent, and the least total family income ranged from P 20,001 to P 25,000 were 12 or 8.05 percent.

The findings imply that most of the families belong to low socio- economic status. This finding suggest that it can be detrimental to the learners' access to educational resources, proper nutrition and well-being of their children, and learners at risk of dropping out and limited participation of parents to the school activities, meetings and conferences with the teachers. Further, it suggests that school officials should be implementing support mechanism to strengthen the collaboration, implement feeding program in the school for severely wasted learners, and engagement of parents in school activities and programs related improving support of providing reading resource and mathematics materials at home.

Ntahemuka, (2024), proved in his study that parents' income had a significant influence on students' academic performance in Masaka sector. The study concluded that the higher the family income, the higher the students' performance. Further, concluded that there was a significant positive influence of parents' education on students' academic performance. Finally, concluded that performance of the students was higher for those students with parents in formal occupations than the students with parents in informal occupation.

Mathematics Achievement for the Third Quarter

The data showed the mathematic achievement of grade 5 learners in their third quarter assessment result. The data revealed that majority of grade 5 learners were 52 or 34.90 percent who had performed in their mathematics achievement during the third quarter assessment result categorized as satisfactory, followed by second highest number of learners were 50 or 33.56 percent who had performed in their quarter assessment result categorized as fairly satisfactory, and the least number of grade 5 learners were 11 or 7.38 percent who had their mathematics achievement during the third quarter assessment result categorized as an outstanding performance.

The finding implies that the highest number of learners obtaining satisfactory and fairly satisfaction achievement has decreased and the number of learners obtain the very satisfactory and outstanding performance have increased. This indicates that the effectiveness of differentiated instruction approach, mathematics remediation programs, interventions or enhancement plan employed by the teachers were effective even though there were still a few of the learners who belong to fairly satisfactory achievement. Thus, teachers still must put extra efforts to improve the mathematical ability and achievement of the learners. Differentiated instruction approach, developing the love of math, and fun doing mathematics related application to real life situation and problems as well as different activities geared towards improving their mathematical skills and achievement.

As affirmed by Balangue (2024), a notable improvement in learners' performance across the quarters, transitioning from a poor rating in the first quarter to an average rating in subsequent quarters, culminating in an overall final rating.

*DEGREE OF EFFECTIVENESS OF DIFFERENTIATED INSTRUCTION
APPROACH AS PERCEIVED BY THE RESPONDENTS'
TEACHERS AND LEARNERS*

This section presented the the degree of effectiveness of differentiated instruction approach as perceived by the respondents' teachers and learners as to connecting prior knowledge, considering learners' learning pace, and learning experience. The degree of effectiveness of differentiated instruction approach of the respondents was presented using the four-Likert scale and expressed in a weighted mean. The data was detailed in the Table 3.

Table 3

Degree of Effectiveness of Differentiated Instruction Approach as Perceived by the Respondents Teachers and Learners; ($n_1 = 149$; $n_2 = 5$)

Indicators	WM	Teachers I
<i>Teachers</i>		
<i>Connecting Prior Knowledge</i>		
Learners easily remember prior concepts using differentiated activities.	3.40	HE
Learners can easily connect previous lessons in solving problems	3.60	HE
Learners can perform activities that suit to their level.	3.80	HE

Learners are actively engaged when differentiated instruction is used.	3.40	HE
Meaningful learning is evident when using varied activities.	3.60	HE
General weighted mean	3.56	HE
<hr/> <i>Considering Learners' Learning Pace</i>		
Learners are able to complete task .	3.60	HE
Learners can freely apply concepts based on what they understand	3.80	HE
Collaborative learning experience is evident.	3.60	HE
Varied activities are provided to meet diverse learning needs.	3.60	HE
Learners can comprehend the lessons well.	3.40	HE
General weighted mean	3.60	HE
<hr/> <i>Learning Experience</i>		
Learners participate actively when varied activities are provided	3.20	E
Learners confidently perform their tasks.	3.60	HE
Learning support is felt when differentiated instruction is applied	3.20	E
Differentiated instruction enhances positive learning environment	3.40	HE
Learners are more motivated when varied activities meet their needs	3.40	HE
General weighted mean	3.36	HE
Overall weighted mean	3.51	HE
<hr/> <i>Learners</i>		
<i>Connecting Prior Knowledge</i>		
I am able to recall relevant prior concepts through varied activities.	3.07	E
I use examples from past lessons to solve present problems.	3.49	HE

I can choose activities that relate my level of learning.	3.54	HE
I actively participate in discussions where I have previous knowledge.	3.25	HE
My learning is meaningful when I can connect it to the past lessons.	3.49	HE
<i>General weighted mean</i>	3.37	HE
<hr/>		
<i>Considering learners' learning pace</i>		
I am able to complete tasks at a pace appropriate to my understanding.	3.32	HE
I can apply concepts independently based on my understanding.	3.40	HE
I can work with peers collaboratively without pressure.	3.36	HE
My teacher provides activities for slow, average, and fast learners.	3.38	HE
I can grasp the lesson before moving to new lessons.	3.35	HE
<i>General weighted mean</i>	3.36	HE
<hr/>		
<i>Learning Experience</i>		
I actively participate in class activities without fear.	3.10	E
I am confident to do the tasks when it meets my learning needs.	3.35	HE
I feel supported and guided by the teacher throughout learning.	3.09	E
I enjoy and have positive attitude towards learning activities.	3.37	HE
I can freely express my ideas during group works.	3.31	HE
<i>General weighted mean</i>	3.24	E
<i>Overall weighted mean</i>	3.32	HE

Legend

Weight	Range	Category
4	3.25 - 4.00	Highly Effective (HE)
3	2.50 - 3.24	Effective (E)
2	1.75 - 2.49	Less Effective (LE)

1 1.00 - 1.74 Not Effective (NE)

Teachers' Perceptions

This part highlighted the teachers' perceptions on the degree of effectiveness of the differentiated instructions as to connecting prior knowledge, considering learners' learning pace, and learning experience. The data revealed that the overall weighted mean was rated 3.51 had categorized as highly effective.

Connecting prior knowledge. This portion presented the teachers' perceptions on the degree of effectiveness of the differentiated instructions of grade 5 learners as to connecting prior knowledge. The data revealed that the general weight mean of the teachers' perceptions on the degree of effectiveness of the differentiated instructions of grade 5 learners as to connecting prior knowledge was rated 3.56 categorized as highly effective. The highest rating among the indicator statement was "Learners can perform activities that suit to their level" had rated 3.80 categorized as highly effective. The second in rank among indicators were "Meaningful learning is evident when using varied activities", and "Learners can easily connect previous lessons in solving problems" had rated tied 3.60 categorized as highly effective, and the lowest among the indicator statement were "Learners easily remember prior concepts using differentiated activities" and "Learners are actively engaged when differentiated instruction is used" had rated tied 3.40 categorized as highly effective.

The findings imply that differentiated instruction addresses learners' diverse abilities and readiness levels, enabling them to participate actively and have successful learning tasks. Additionally, DI promotes the transfer of prior knowledge

to new learning situations, improving learners' critical thinking and problem-solving skills. Thus, it also provides diverse instructional activities that will help learners think deeper understanding, sustain engagement and develop critical thinking and logical reasoning.

As supported by Budejas (2025) stated that differentiated instruction greatly helps in the improvement of students' performance in mathematics as they were able to be engaged in activities suited to their readiness levels and learning preferences. As learners became more actively involved in the learning process when lessons were tailored to their abilities and interests (Insorio & Librada, 2024). Furthermore, addressing learner diversity through differentiated instruction is appropriate (Insorio, 2024). The use of differentiated strategies is used in teaching Statistics and Probability, students' cognitive, behavioral and emotional engagement which enhances academic outcomes but also fosters positive learning attitudes, which are crucial in mathematics where low engagement often links with poor performance.

Considering learners' learning pace

This part highlighted the teachers' perceptions on the degree of effectiveness of the differentiated instructions of grade 5 learners as to considering learner's learning pace. The data revealed that the general weight mean of the teachers' perceptions on the degree of effectiveness of the differentiated instructions of grade 5 learners as to considering learner's learning pace was rated 3.60 categorized as highly effective. The highest rating among the indicator statement was "Learners can freely apply concepts based on what they

understand” had rated 3.80 categorized as highly effective. The second in rank among indicator was “Learners are able to complete task ” , “Collaborative learning experience is evident, and “Varied activities are provided to meet diverse learning needs.had rated tripled tied 3.60 categorized as highly effective, and the lowest among the indicator statement was “Learners can comprehend the lessons well” had rated 3.40 categorized as highly effective.

The findings imply that differentiated instruction enables learners to demonstrate their understanding at their own pace, promoting deeper comprehension and application of their own knowledge. It also encourages meaningful interaction or sharing their learning abilities. However, teachers also employ several instructional strategies and learning tasks that will address in learners’ readiness, interest and abilities. Moreover, teachers’ instructional activities are suited to learners’ capabilities and pace, enhancing motivation of tasks completion, and improving learners’ confidence and motivation.

As supported by Hidayati (2020), stated that differentiated instruction is an approach that can be used to facilitate students with various characteristics and help them to master mathematics in every topic learned. Implementing the lessons using differentiated instruction in different topics, peer-reviewed, and peer-presented in a real classroom. Different students’ progress in mastering some topics in the classroom often happens. It also occurred in the mathematics classroom because the teachers use the same method for all students’ type. Differentiation in instruction addresses a wide range of learning needs and interests

Learning experience. This part highlighted the teachers' perceptions on the degree of effectiveness of the differentiated instructions of grade 5 learners as to learning experience. The data revealed that the general weight mean of the teachers' perceptions on the degree of effectiveness of the differentiated instructions of grade 5 learners as to learning experience was rated 3.36 categorized as highly effective. The highest rating among the indicator statement was "Learners confidently perform their tasks" had rated 3.60 categorized as highly effective. The second in rank among indicator was "Differentiated instruction enhances positive learning environment" and "Learners are more motivated when varied activities meet their needs" had rated tied 3.40 categorized as highly effective, and the lowest among the indicator statement was "Learners participate actively when varied activities are provided" and "Learning support is felt when differentiated instruction is applied" had rated tied 3.20 categorized as effective.

The findings imply that differentiated instruction provides learning experiences that are appropriate to learners' abilities and readiness, thereby increasing their confidence and willingness to participate in the classroom discussion and interaction. It also uses a varied instructional strategies foster an inclusive, and supportive classroom atmosphere where learners feel valued and encouraged to participate in learning. In addition, DI tailoring learning activities to learners' interest and readiness that will increase their participation, motivation and courage for learning.

As cited by Magayon and Tan (2020), emphasized that differentiated instruction emerged as a significant pedagogical strategy in Philippine basic education system particularly in addressing diverse learner needs within mathematics classrooms. Under K to 12 curriculum, Filipino mathematics teachers are encouraged to differentiate learning activities – modifying content, process, and assessment to match students' readiness, interests, and learning profiles. Although implementation varies, the increasing inclusion of differentiated instruction reflects a shift toward more responsive and inclusive math teaching practices in the Philippines.

Learners' Perceptions

This part highlighted the learners' perceptions on the degree of effectiveness of the differentiated instructions as to connecting prior knowledge, considering learners' learning pace, and learning experience. The data revealed that the overall weighted mean was rated 3.51 had categorized as highly effective.

Connecting prior knowledge. This portion presented the learners' perceptions on the degree of effectiveness of the differentiated instructions of grade 5 learners as to connecting prior knowledge. The data revealed that the general weight mean of the learners' perceptions on the degree of effectiveness of the differentiated instructions of grade 5 learners as to connecting prior knowledge was rated 3.37 categorized as highly effective. The highest rating among the indicator statement was "I can choose activities that relate my level of learning" had rated 3.54 categorized as highly effective. The second in rank among indicator was "I use examples from past lessons to solve present problems", and

“My learning is meaningful when I can connect it to the past lessons.” had rated tied 3.49 categorized as highly effective, and the lowest among the indicator statement was “I am able to recall relevant prior concepts through varied activities” had rated 3.07 categorized as effective.

The findings imply that differentiated instruction addresses learners’ diverse abilities and readiness levels, enabling them to participate actively and have successful learning tasks. Additionally, DI promotes the transfer of prior knowledge to new learning situations, improving learners’ critical thinking and problem-solving skills. Thus, it also provides diverse instructional activities that will helps learners think deeper understanding, sustain engagement and develop critical thinking and logical reasoning.

As supported by Ironside (2025), stated that the first gear of engagement in math class is usually sharing solutions. Through collaboration, students receive support from one another that is different from the support they would get from adults. In order to have true collaboration, kids need protocols and practice.

Likewise, using flexible groups and offering a range of problems, most students find that some skills and standards pose a greater challenge than others. This means that for each skill or standard, kids will need a different level of instruction. Grouping decisions are best made in the moment, which means that teachers need to know their students and be prepared with a variety of tasks and learning opportunities (Ironside, 2025).

Considering learners’ learning pace. This part highlighted the learners’ perceptions on the degree of effectiveness of the differentiated instructions of

grade 5 learners as to considering learner's learning pace. The data revealed that the general weight mean of the learners' perceptions on the degree of effectiveness of the differentiated instructions of grade 5 learners as to considering learner's learning pace was rated 3.36 categorized as highly effective. The highest rating among the indicator statement was "I can apply concepts independently based on my understanding " had rated 3.40 categorized as highly effective. The second in rank among indicator was "My teacher provides activities for slow, average, and fast learners. " had rated 3.38 categorized as highly effective, and the lowest among the indicator statement was "I am able to complete tasks at a pace appropriate to my understanding." had rated 3.32 categorized as highly effective.

The findings imply that differentiated instruction enables learners to demonstrate their understanding at their own pace, promoting deeper comprehension and application of their own knowledge. It also encourages meaningful interaction or sharing their learning abilities. However, teachers also employ several instructional strategies and learning tasks that will address in learners' readiness, interest and abilities. Moreover, teachers' instructional activities are suited to learners' capabilities and pace, enhancing motivation of tasks completion, and improving learners' confidence and motivation.

As supported by Llego (2020), cited many benefits to using differentiated instruction. One advantage is that it allows teachers to cater to the individual needs of each student as every student has different learning pace. In the same vein, differentiated instruction can help improve student motivation. When students feel

they can learn in a way that suits them, they are more likely to be motivated to learn. Also, DI can help to improve classroom behavior. Thus, in totality, differentiated instruction can have a positive impact on both teachers and students.

Learning experience. This part highlighted the learners' perceptions on the degree of effectiveness of the differentiated instructions of grade 5 learners as to learning experience. The data revealed that the general weight mean of the learners' perceptions on the degree of effectiveness of the differentiated instructions of grade 5 learners as to learning experience was rated 3.24 categorized as effective. The highest rating among the indicator statement was "I enjoy and have positive attitude towards learning activities" had rated 3.37 categorized as highly effective. The second in rank among indicator was "I am confident to do the tasks when it meets my learning needs" had rated 3.35 categorized as highly effective, and the lowest among the indicator statement was "I actively participate in class activities without fear." had rated 3.10 categorized as effective.

The findings imply that learners have more confidence when learning activities when learning activities are aligned with their knowledge and abilities, enabling them to complete the tasks successfully. It also enhances learners' motivation and interest by providing to interact and appropriate learning experiences, resulting significant attitude towards learning. Moreover, it fosters a collaborative and supportive classroom environment where learners comfortably share their thoughts interactively and learning with their classmates.

As affirmed by Antonio (2024), stated that one prominent approach gaining traction is the implementation of differentiated instruction. With its focus on recognizing and accommodating diverse learning styles and abilities within the classroom, this method empowers educators to tailor their teaching to meet the unique needs of each student.

Additionally, differentiated instruction and technology integration promote a student-centered approach that is vital in Philippine classroom setting. By shifting the focus from traditional teacher-led instruction to student-centered learning experiences, students are empowered to take ownership of their learning journey. Moreover, fostering a supportive and nurturing environment where students feel valued, respected, and encouraged to express their ideas foster a positive classroom culture conducive to academic growth and personal development (Antonio, 2024).

*SIGNIFICANT DIFFERENCE IN THE PERCEPTIONS BETWEEN THE
TEACHERS AND LEARNERS REGARDING THE DEGREE OF
EFFECTIVENESS OF THE DIFFERENTIATED
INSTRUCTION*

The most significant gap in the perceptions between teachers and learners would probably center on purpose and pacing. While teachers often view differentiated instruction as a tool to cover curriculum and assess multiple skills levels, learners often perceive it as a source of confusion if it involved rushed activities, fragmented tasks, or an unequal workload across groups. The t-test that

follows however, showed the results which determined whether a significant difference in the perceptions of the teachers and learners about the degree of effectiveness of differentiated instruction existed. Table 4 below shows the results

Table 4

T-test Results of the Difference in the Perceptions of the Teachers and Learners About the Degree of Effectiveness of Differentiated Instruction ($n_1=5$; $n_2=149$)

Respondents	df	Mean	sd	Diff.	Computed t-value	Critical t-value	Decision	Interpretation
Teachers		4.11	0.36					
and	152			0.170	3.407	1.645	Reject Ho	Significant
Learners		3.94	0.09					

The results showed that the null hypothesis of no difference in the respondents' mean perceptions was rejected. This was due to the fact that the computed t value is greater than the critical t at 0.05 level of significance. The computed t was found to be 3.407 with 152 df yielding a critical t of 1.645 at infinity. This led to the rejection of the research hypothesis on the existence of a difference in the perceptions of 5 teachers and 149 learners about the degree of effectiveness of differentiated instruction in Mathematics.

The findings imply that the respondents' teachers and learners gave opposing perceptions about the effectiveness of Differentiated Instruction (DI) as an approach in enabling the learners to improve their knowledge in Mathematics. Teachers are motivated and viewed DI as a change though this took much of their

time demanding flexible grouping and continuous assessment. They may have seen challenges demanding flexible grouping and continuous assessment. The learners perceived it as a supportive mechanism that respect their individual needs.

Al source, Taylor and Francis (2026), stated that teachers and learners experience DI from opposite ends. It could be a source of unwarranted peer comparisons. Both group, the source said, noted the gap between its perceived value and its practical real-world implementation. Padmore and Ali (2024) highlighted the effectiveness of DI in improving academic performance and student motivation. However, their studies identify significant barriers to its successful execution in the classroom. On academic performance both noted that implementing differentiated instruction -leads to significantly higher academic achievement and better comprehension.

*SIGNIFICANT RELATIONSHIP BETWEEN THE DEGREE OF EFFECTIVENESS
OF DIFFERENTIATED INSTRUCTION APPROACH AND THE MATHEMATICS
ACHIEVEMENT OF THE GRADE 5 LEARNERS*

The chi-square test of relationship at 0.05 level of significance was done to See the relationship between degree of effectiveness of differentiated instruction approach and the mathematics achievement of grade 5 learners. The results were showed in Table 5.

Table 5

Chi -square Test of Relationship Between the Degree of Effectiveness of Differentiated Instruction Approach and the Mathematics Achievement of Grade 5 Learners

Paired Variables	df	Computed t-value	Critical t-value	Decision	Interpretation
Differentiated Instruction Approach and Mathematics Achievement	9	21.67	16.92	Reject Ho	Significant

The results had shown that the null hypothesis of no relationship between the degree of effectiveness of differentiated instruction approach and mathematics achievement of grade 5 learners was rejected. The computed chi-square value of 21.67 was seen to be greater than the critical chi-square value of 16.92 at 0.05 level of significance. This led to the inference that there was a significant result of the test done at the aforementioned set level.

The results implied that the differentiated instruction approach in teaching Mathematics has improved the achievement of Grade 5 learners in Mathematics.

Studies generally show that differentiated instruction has a positive effect on mathematics achievement , significantly boosting engagement, and critical thinking. However, the degree of effectiveness largely depends on implementation and student ability level. Madati and Mulder (2025), explored the effects of differentiated instruction on primary students' unique readiness, interest, learning

profiles boosts engagement and significantly improves performance particularly in problem solving.

CHALLENGES ENCOUNTERED BY THE TEACHERS IN IMPLEMENTING DIFFERENTIATED INSTRUCTION APPROACH

This section presented the challenges encountered by the teachers in implementing differentiated instruction approach. The data reflected using the four Likert scale and its weighted mean. The data were presented in Table 6.

Table 6

Challenges Encountered by the Teachers (n= 5)

Indicators	Weighted Mean	Interpretation
Large class size	2.80	MC
Lack of adequate teacher training	2.80	MC
Poor internet provider /connectivity	3.80	HC
Insufficient time	2.60	MC
Classroom management issues	3.60	HC
Learner's attitude toward learning	3.40	HC
General weighted mean	3.17	MC

Legend

Weight	Range	Category
4	3.25 - 4.00	Highly Challenging (HC)
3	2.50 - 3.24	Moderately Challenging (MC)
2	1.75 - 2.49	Slightly Challenging (SC)
1	1.00 - 1.74	Not Challenging at All (NCA)

Table 6 showed the challenges encountered by the teachers in implementing differentiated instruction approach and mathematics achievement of the learners. The data revealed that three of the challenges indicators were rated as highly challenging and three of the indicators were rated as moderately challenging. The general weighted mean was 3.17 rated as moderately challenging. The highest among the challenges indicator statement as stated "Poor internet provider /connectivity" was rated as highly challenging with the weighted mean of 3.80, the second highest of the indicator statement as stated "Classroom management issues" was rated as highly challenging with the weighted mean of 3.60, the third highest of the indicator statement as stated "Learner's attitude toward learning" were rated as highly challenging with the weighted mean of 4.40, and the least challenged among the indicator statement as stated "Insufficient time needs" was rated as moderately challenging with the weighted mean of 2.60.

The findings imply that teachers face challenges in poor internet provider/connectivity, classroom management issue and learners' attitude towards learning. The results suggest that the school need a leader that give priority on intervention programs or remedial instruction to strengthen the learners' foundational skills such as mastery of the basic operations in math, introduce the lesson by integration of real-life experience, and application to problem-solving. Additionally, indicates that minimize instructional time lost due to class disruption or intervening activities, provide continuous learning experience for professional enhancement on interactive and innovative teaching

strategies in mathematics, and provide support on internet connection in all classroom in the school.

As supported by Itong, et. al. (2024), concluded that the majority of the respondents demonstrated proficiency in mathematics and still had encountered significant challenges in learning the subject. Further, concluded that there was no statistically significant relationship between the challenges faced and mathematics performance, addressing these challenges remain crucial for fostering a positive learning environment and promoting student success.

As affirmed by Pari-an and Rodriguez (2024), they're conducted the level of utilization teaching reading strategies by teachers greatly depend on the circumstances such influence the way they manage their time and effort in teaching reading to their learners, and the impact the way teachers employ their teaching strategies. There are factors to be considered the creativity and resourcefulness of the teachers, the learners lack of interest in reading, lack of family support system and lack of materials at home to supplement the materials being utilized.

Likewise, Best (2020), pointed out several challenges in the implementation of differentiation such as lack of administrative support, fear of staying from the curriculum, logistical challenges, time spent planning, and parental resistance.

OUTPUT

ACTION PLAN

Rationale

Mathematics is one of the important learning areas that need to be taught as the children started schooling. Based on research, there are learners who have mathematics anxiety , have fear of learning the subject, and found difficulties in learning math concepts most specially in a classroom where there are diverse learners- who have different learning needs, learning styles, and learning pace. Thus, instruction must be varied to address every learner's need in the classroom particularly in mathematics. Hence, the utilization of differentiated instruction plays a crucial role in math class. The result of this investigation proves that there is a significant relationship between the degree of effectiveness of differentiated instruction and mathematics achievement of grade 5 learners. However, despite this significance, there are still known barriers that math teachers have identified which led to the making of this action plan.

Objectives:

This action plan is made to guide teachers in implementing differentiated instruction as one way of improving learners' mathematics achievement, and the objectives are specified herein:

- 1.To introduce innovative strategies and techniques that will heighten the implementation of differentiated instruction;
- 2.To allocate extra time for the learners to enhance their skills in math and help them develop a positive attitude towards mathematics; and

3.To reinforce activities that will sustain the intervention programs that have been found to be effective in increasing mathematics achievement.

Scheme of Implementation

The implementation will be divided into three phases which include the pre-implementation phase, proper implementation phase, and post-implementation phase. This is therefore the scheme of implementations of the proposed action plan for the enhancement of the behavioral practices and reading performance of the grade 5 learners.

The implementation of this action plan consists of the following parts:

Pre-implementation Phase. During this stage, the teachers together with the school head will identify the concerns, issues, gaps, and problems [CIGPs] related to the teaching of reading. Likewise, in this stage, least learned competencies in mathematics will be identified.

The following strategies are to be undertaken in preparation of the proper implementations of the proposed action plan:

- a. Presentation of the proposed action plan to the school and district level for review and possible alignment and approval;
- b. Discuss the different strategies in the plan;
- c. Discussion of the financial requirements of the plan to ensure smooth implementation of the program;
- d. Conduct consultations with the school head and other DepEd officials to ensure the support and collaboration in the realization of the plans;
- e. Conduct proper channeling and coordination to ensure mobilization and levelling off of the deliverables and expectation among the teachers and other stakeholders of the school;

- f. Make sure that the plan has been approved by the proper authorities to ensure continuity of the implementation of the activities and strategies;

Proper Implementation Phase. This is the second phase of the implementation. During this stage constant monitoring about the activities undertaken will be done. Records must be intact and updated with regard to the activities being done. Concerns, Issues, Gaps, and Problems (CIGPs) encountered during this stage must also be noted. The following activities are suggested to carry out during the implementation phase.

- a. Ensure that every detail of the proposed action plan is promptly implemented;
- b. Continuously monitor and evaluate the progress of the implementation;
- c. Giving of feedback will be initiated;
- d. Collaborate with the other members of the school organization who are part of the implementation of the program; and
- e. Constant and continuous implementation for improvement.

Post-implementation Phase. This is the last stage of the implementation. During this stage, the program implemented will be evaluated and assessed using school's developed and localized monitoring and evaluation tools and processes. Giving of feedback with regards to the positive and negative impacts of the program will be done in this stage. Planning for specific techniques that will further improve the program can also be done in this stage.

- a. Ensure that proper evaluation standards are identified during the pre-implementation phase are observed and followed;
- b. Provide feedback about the concerns, issues, gaps, and problems during the implementation; and

c. Maintain communication among and between stakeholders of the program

Matrix of Implementation

Areas of concern/s	Specific Objectives	Methodologies/ Strategies/ Activities	Persons Responsible	Time Frame	Resource Requirements	Budgetary Requirement	Source of Funds	Success Indicators	Remarks
Poor internet provider /connectivity	To improve the internet connectivity of the school	Conduct a consultative meeting with the faculty and the School Governing Council	School heads Teachers Parents Stakeholders	Whole year round	Network Provider connection	2,000.00	MOOE	Internet connectivity of the school has improved	
Learners' attitude towards math and poor study habits	To develop the habit of studying math among learners to create a positive impact to their performance.	Conduct school wide strategies that are applicable to the school environment; - Launch Math Intervention Programs such as Klap (Klasme y t Ko,	Teachers School Heads Stakeholder	All year long	Teaching and Mentoring materials	2,000.00	PTA funds	Math Program Activities are conducted and launch as planned	

		Partner Ko							
Classroom management	To capacitate teachers with varied techniques in managing behaviors	Conduct School Learning Action Cell (SLAC) Have the master teacher/teacher who is expert in classroom management shared their best practices	School Heads Master Teacher Teachers	Whole year round	Teacher's Self Assessment SLAC Plan	500.00	MO OE	SLAC is religiously implemented and properly documented.	
Maintain communication to parents and stakeholders	To ensure that schools management communicates information about math performance among the learners to the parents and other Stakeholders	Present to the parents and other stakeholders the various programs that will enhance the numeracy skills of the learners. Provide information materials	Teachers School Heads Parents Parents Stakeholders	Every Parent - Teacher Conference	Information material like leaflets, brochures, or it could be posted through class's fb page or group chats	2,000.00	MO OE	All information needed to be relayed to the stakeholders and support are given to ensure program successes	

		ls and mediu m to effectiv ely commu nicate to the stakeho lders and other authorit ies who can help the numera cy perform ance of the learner s							
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CHAPTER 5

SUMMARY, FINDINGS, CONCLUSION, AND RECOMMENDATION

This chapter presented the summary, findings, conclusion, and recommendation. Thus, it emphasized the implementation of an action plan as the output of the study.

SUMMARY

This section summarized the main idea of the study. This provided the research road map how this study was realized to undergo so that he would be able to capture the whole context of scholarly work.

This study covered the grade 5 learners and teachers. There was a total of 154 respondents, composed of 149 learners, and five teachers were participants in this study. A descriptive method was utilized and the statistical treatment such as simple percent, weighted mean, t-test for paired observations, and chi square as represented the interpretation of the variables. These statistical treatments were used to obtain the conclusion based on the findings and interpretation of data.

This study determined the the profile of the teachers in terms of their highest educational attainment, number of years in teaching and number of relevant trainings attended, and strategies adapted; and the profile of the learners in terms of their sex, combined family monthly income, and mathematics grade for the third quarter; the degree of effectiveness of differentiated

instruction approach as perceived by the respondents as to connecting prior knowledge, considering learners' pace, and learning experience; significant difference in the perceptions of the teachers and learners; significant relationship between the degree of effectiveness of differentiated instruction approach and the mathematics achievement of the grade 5 learners; and the challenges encountered by the teachers in implementing differentiated instruction approach. Hence, the output of this study was an action plan.

FINDINGS

The following findings were obtained based on data gathered, statistically analyzed, and interpreted.

Profile of the Respondents' Sectors

This section presented of profile of the respondents' sectors, the teachers and the learners.

Profile of the teachers. This part provided the profile of the teachers as to highest educational attainment, experience in teaching, relevant trainings/seminars attended, and strategies adapted.

Highest educational attainment. The data revealed that there were four or 80.00 percent of the teachers who have earned units in masteral degree, and one or 20.00 percent of the teacher who had earned doctoral degree.

Experience in teaching. The data revealed that there were four or 80.00 percent of the teachers had their length of experience in teaching ranging

from seven to nine years, and one or 20.00 percent of the teachers who had their length of experience in teaching ranging from ten years and above.

Number of relevant trainings attended. The data revealed that majority of the teachers were three or 60.00 percent who had attended four to six relevant trainings, one or 20.00 percent of the teachers who had attended different number of relevant trainings or seminars ranging from seven to nine, and 10 and above, respectively.

Strategies adapted. The data revealed that there were five or 100.00 percent of the teachers had their strategies adapted integrating games in differentiated instruction in teaching mathematics.

Profile of the learners. This part provided the profile of the learners in terms of their sex, total family income, and mathematics achievement in third quarter assessment result.

Sex. The data revealed that majority of the learners were males about 81 or 54.36 percent, while the female learners were 68 or 45.64 percent.

Total family income. The data denoted that majority of the parents whose total family income ranged below P 10,000 were 52 or 34.90 percent. The second highest total family income ranged from P 15,001 to P 20,000 were 48 or 32.21 percent, and the least total family income ranged from P 20,001 to P 25,000 were 12 or 8.05 percent.

Mathematics achievement for the third quarter. The data revealed that majority of grade 5 learners were 52 or 34.90 percent who had performed in their mathematics achievement during the third quarter assessment result

categorized as satisfactory, followed by second highest number of learners were 50 or 33.56 percent who had performed in their quarter assessment result categorized as fairly satisfactory, and the least number of grade 5 learners were 11 or 7.38 percent who had their mathematics achievement during the third quarter assessment result categorized as an outstanding performance.

Degree of Effectiveness of Differentiated Instruction Approach as Perceived by the Respondents Teachers and Learners

Teachers' perceptions. This part highlighted the teachers' perceptions on the degree of effectiveness of the differentiated instructions as to connecting prior knowledge, considering learners' learning pace, and learning experience. The data revealed that the overall weighted mean was rated 3.51 had categorized as highly effective.

Connecting prior knowledge. The data revealed that the general weight mean of the teachers' perceptions on the degree of effectiveness of the differentiated instructions of grade 5 learners as to connecting prior knowledge was rated 3.56 categorized as highly effective. The highest rating among the indicator statement was "Learners can perform activities that suit to their level" had rated 3.80 categorized as highly effective. The second in rank among indicators were "Meaningful learning is evident when using varied activities", and "Learners can easily connect previous lessons in solving problems" had rated tied 3.60 categorized as highly effective, and the lowest among the indicator statement were "Learners easily remember prior concepts using differentiated activities" and

“Learners are actively engaged when differentiated instruction is used” had rated tied 3.40 categorized as highly effective.

Considering learners’ learning pace. The data revealed that the general weight mean of the teachers’ perceptions on the degree of effectiveness of the differentiated instructions of grade 5 learners as to considering learner’s learning pace was rated 3.60 categorized as highly effective. The highest rating among the indicator statement was “Learners can freely apply concepts based on what they understand” had rated 3.80 categorized as highly effective. The second in rank among indicator was “Learners are able to complete task ” , “Collaborative learning experience is evident, and “Varied activities are provided to meet diverse learning needs.had rated tripled tied 3.60 categorized as highly effective, and the lowest among the indicator statement was “Learners can comprehend the lessons well” had rated 3.40 categorized as highly effective.

Learning experience. The data revealed that the general weight mean of the teachers’ perceptions on the degree of effectiveness of the differentiated instructions of grade 5 learners as to learning experience was rated 3.36 categorized as highly effective. The highest rating among the indicator statement was “Learners confidently perform their tasks” had rated 3.60 categorized as highly effective. The second in rank among indicator was “Differentiated instruction enhances positive learning environment” and “Learners are more motivated when varied activities meet their needs” had rated tied 3.40 categorized as highly effective, and the lowest among the indicator statement was “Learners participate actively when varied activities are provided” and “Learning

support is felt when differentiated instruction is applied” had rated tied 3.20 categorized as effective.

Learners’ perceptions. This part highlighted the learners’ perceptions on the degree of effectiveness of the differentiated instructions as to connecting prior knowledge, considering learners’ learning pace, and learning experience. The data revealed that the overall weighted mean was rated 3.51 had categorized as highly effective.

Connecting prior knowledge. The data revealed that the general weight mean of the learners’ perceptions on the degree of effectiveness of the differentiated instructions of grade 5 learners as to connecting prior knowledge was rated 3.37 categorized as highly effective. The highest rating among the indicator statement was “I can choose activities that relate my level of learning” had rated 3.54 categorized as highly effective. The second in rank among indicator was “I use examples from past lessons to solve present problems”, and “My learning is meaningful when I can connect it to the past lessons.” had rated tied 3.49 categorized as highly effective, and the lowest among the indicator statement was “I am able to recall relevant prior concepts through varied activities” had rated 3.07 categorized as effective.

Considering learners’ learning pace. The data revealed that the general weight mean of the learners’ perceptions on the degree of effectiveness of the differentiated instructions of grade 5 learners as to considering learner’s learning pace was rated 3.36 categorized as highly effective. The highest rating among the indicator statement was “I can apply concepts independently based on

my understanding ”had rated 3.40 categorized as highly effective. The second in rank among indicator was “My teacher provides activities for slow, average, and fast learners. ” had rated 3.38 categorized as highly effective, and the lowest among the indicator statement was “I am able to complete tasks at a pace appropriate to my understanding.” had rated 3.32 categorized as highly effective.

Learning experience. The data revealed that the general weight mean of the learners’ perceptions on the degree of effectiveness of the differentiated instructions of grade 5 learners as to learning experience was rated 3.24 categorized as effective. The highest rating among the indicator statement was “I enjoy and have positive attitude towards learning activities” had rated 3.37 categorized as highly effective. The second in rank among indicator was “I am confident to do the tasks when it meets my learning needs” had rated 3.35 categorized as highly effective, and the lowest among the indicator statement was “I actively participate in class activities without fear.” had rated 3.10 categorized as effective.

Significant Difference in the Perceptions of the Teachers and Learners Regarding the Degree of Effectiveness of Differentiated Instruction Approach

The results showed that the null hypothesis of no difference in the respondents’ mean perceptions was rejected. This was due to the fact that the computed t value is greater than the critical t at 0.05 level of significance. The computed t was found to be 3.407 with 152 df yielding a critical t of 1.645 at infinity. This led to the rejection of the research hypothesis on the existence of a difference

in the perceptions of 5 teachers and 149 learners about the degree of effectiveness of differentiated instruction in Mathematics.

Significant Relationship Between the Degree of Effectiveness of Differentiated Instruction Approach and the Mathematics Achievement of the Grade 5 Learners

The results had shown that the null hypothesis of no relationship between the degree of effectiveness of differentiated instruction approach and mathematics achievement of grade 5 learners was rejected. The computed chi-square value of 21.67 was seen to be greater than the critical chi-square value of 16.92 at 0.05 level of significance. This led to the inference that there was a significant result of the test done at the aforementioned set level.

Challenges Encountered by the Teachers in Implementing Differentiated Instruction Approach

The data showed the challenges encountered by the teachers in implementing differentiated instruction approach and mathematics achievement of the learners. The data revealed that three of the challenges indicators were rated as highly challenging and three of the indicators were rated as moderately challenging. The general weighted mean was 3.17 rated as moderately challenging. The highest among the challenges indicator statement as stated "Poor internet provider /connectivity" was rated as highly challenging with the weighted mean of 3.80, the second highest of the indicator statement as stated "Classroom management issues" was rated as highly challenging with the weighted mean of 3.60, the third highest of the indicator statement as stated

“Learner’s attitude toward learning” were rated as highly challenging with the weighted mean of 4.40, and the least challenged among the indicator statement as stated “Insufficient time needs” was rated as moderately challenging with the weighted mean of 2.60.

CONCLUSION

Based on the findings of this study, it was concluded that the overall weighted mean of all indicators in the degree of effectiveness of differentiated instructions as perceived by the teachers and learners was rated as highly effective. The result suggested that there’s a need to keep one’s motivation high, addressing diverse learner needs within mathematics classrooms, encouraged to differentiate learning activities, and instruction addresses a wide range of learning needs and interests. Additionally, findings revealed that there was a significant difference in the perceptions of the teachers and learners regarding the degree of effectiveness of differentiated instruction approach. The results indicated that teachers and learners gave opposing perceptions about the effectiveness of Differentiated Instruction (DI) as an approach in enabling the learners to improve their knowledge in Mathematics.

Moreover, findings also revealed that there was a significant relationship between the degree of effectiveness of differentiated instruction approach and the mathematics achievement. The results entailed that the differentiated instruction approach is one of great factors in the improvement and enhancement the learners’ mathematics achievement. However, teachers faced significant

challenges on poor internet connectivity, classroom management issue, and learners' attitude towards learning.

RECOMMENDATION

Based on the findings and conclusion of this investigation, it was hereby recommended that the action plan may be implemented and adopted. For the reason that, it may help improve the degree of effectiveness of differentiated instruction approach and the mathematics achievement of the learners, thus, the learning gaps can be addressed strategically by continuous consultation, collaboration, engagement among school officials, and the stakeholders as well.

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APPENDICES

APPENDIX A₁

Transmittal letter for the Schools Division Superintendent

Republic of the Philippines
Department of Education
Region VII, Central Visayas
DIVISION OF LAPU-LAPU CITY

March 8, 2026

MARILYN S. ANDALES, Ed.D, CESO V
Schools Division Superintendent
Division of Lapu-Lapu City

Madame:

Peace Be with You!

The researcher is currently conducting a research study on “Differentiated Instruction Approach and Mathematics Achievement of Grade Five Learners: An Action Plan”, as partial fulfillment of the requirements for the degree Master of Arts in Education (MAEd) major in Administration and Supervision at Felipe R. Verallo Memorial Foundation Incorporated.

In this connection, she would like to request permission from your good office to allow her to conduct a survey to the grade five learners and teachers at Gun-ob Elementary School, Lapu-Lapu City.

Rest assured that the data gathered from this study will be taken with utmost confidentiality.

Your favorable consideration on this request is highly appreciated. Thank you so much.

Very truly yours,

KIEZL CHE Y. LAGARE
Researcher

Noted:

AGAPITO P. PINO JR, D.M.
Adviser

Approved by:

MARILYN S. ANDALES, Ed.D, CESO V
Schools Division Superintendent

APPENDIX A₂

Transmittal Letter for the Public Schools District Supervisor

Republic of the Philippines
Department of Education
Region VII, Central Visayas
DIVISION OF LAPU-LAPU CITY

March 8, 2026

CZARINA RITZKO J. SAGARINO
PSDS, District VI
Division of Lapu-Lapu City

Madame:

Peace Be with You!

The researcher is currently conducting a research study on “Differentiated Instruction Approach and Mathematics Achievement of Grade Five Learners: An Action Plan”, as partial fulfillment of the requirements for the degree Master of Arts in Education (MAEd) major in Administration and Supervision at Felipe R. Verallo Memorial Foundation Incorporated.

In this connection, she would like to request permission from your good office to allow her to conduct a survey to the grade five learners and teachers at Gun-ob Elementary School, Lapu-Lapu City.

Rest assured that the data gathered from this study will be taken with utmost confidentiality.

Your favorable consideration on this request is highly appreciated. Thank you so much.

Very truly yours,

KIEZL CHE Y. LAGARE
Researcher

Noted:

AGAPITO P. PINO JR., D. M.
Adviser

Approved by:

CZARINA RITZKO J. SAGARINO
PSDS, District VI

APPENDIX A₃

Transmittal Letter for the School Head

Republic of the Philippines
Department of Education
Region VII, Central Visayas
DIVISION OF LAPU-LAPU CITY

March 8, 2026

ARLENE T. SUMALINOG
School Head
Gun-ob ES

Madame:

Peace Be with You!

The researcher is currently conducting a research study on “Differentiated Instruction Approach and Mathematics Achievement of Grade Five Learners: An Action Plan”, as partial fulfillment of the requirements for the degree Master of Arts in Education (MAEd) major in Administration and Supervision at Felipe R. Verallo Memorial Foundation Incorporated.

In this connection, she would like to request permission from your good office to allow her to conduct a survey to the grade five learners and teachers at Gun-ob Elementary School, Lapu-Lapu City.

Rest assured that the data gathered from this study will be taken with utmost confidentiality.

Your favorable consideration on this request is highly appreciated. Thank you so much.

Very truly yours,

KIEZL CHE Y. LAGARE
Researcher

Noted:

AGAPITO P. PINO JR., D. M.
Adviser

Approved by:

ARLENE T. SUMALINOG
School Head

APPENDIX B

A QUESTIONNAIRE OF THE STUDY ON “DIFFERENTIATED INSTRUCTION APPROACH AND MATHEMATICS ACHIEVEMENT OF GRADE 5 LEARNERS: AN ACTION PLAN “

To the Respondents:

Warmest greetings!

The researcher is conducting a research study on “Differentiated Instruction Approach and Mathematics Achievement of Grade Five Learners: An Action Plan”. In light of this, she is humbly asking for your time and cooperation to participate in this investigation.

Furthermore, it is assured that data privacy will be implemented. Thus, no names will necessarily appear on the survey. Your utmost cooperation is highly appreciated. Thank you so much.

Researcher

General Instructions: Choose the appropriate answer of the given questions then put check of your chosen answer on the space provided.

PART I. PROFILE OF THE PARTICIPANTS

Directions: For each question, please select only one answer. If more than one answer is true for you. Kindly check the box of the answer that fits best.

a. PROFILE OF THE TEACHERS

1.1.1 Highest Educational Attainment

- ☐ Doctorate Degree
- ☐ With Doctorate Units
- ☐ Masters Degree
- ☐ With MA Units
- ☐ Bachelors Degree

1.1.2 Teaching experience

- ☐ Ten years and above
- ☐ Seven to nine years
- ☐ Four to six years
- ☐ One to three years

1.1.3 Number of relevant trainings attended

- ☐ Ten and above
- ☐ Seven to nine
- ☐ Four to six
- ☐ One to three
- ☐ None

1.1.4. Strategies adapted

- ☐ Think-Pair-Share
- ☐ Games (board games, digital games)
- ☐ Interviews
- ☐ Role playing

1.2 PROFILE OF THE LEARNERS

1.2.1 Sex

- ☐ Male
- ☐ Female

1.2. 2 Total Family Income

- More than P30,000.00
- ☐ P25,001.00 – P30,000.00
- ☐ P20,001.00 – P25,000.00
- ☐ P15,001.00 – P20,000.00
- ☐ P10,001.00 – P15,000.00
- ☐ Below P10,000.00

1.2.3 Mathematics grade for the third quarter

- ☐ 95-100
- ☐ 90-94
- ☐ 85-89
- ☐ 80-84
- ☐ 75-79
- ☐ 70-74
- ☐ 73 and below

PART II. *DEGREE OF EFFECTIVENESS OF DIFFERENTIATED INSTRUCTION APPROACH, Adopted (Insorio & Librada , 2025).*

Directions: Answer the question below and put a check mark on the column which best describes the degree of effectiveness of differentiated instruction approach based in your learning styles and interests.

Weight	Interpretation	Verbal Interpretation
4	Highly Effective (HE)	The indicator greatly affected the performance of the learners.
3	Effective (E)	The indicator moderately affected the performance of the learners.
2	Less Effective (LE)	The indicator slightly affected the performance of the learners.
1	Not Effective (NE)	The indicator has not affected the performance of the learners.

Learners' Indicators	HE (4)	E (3)	LE (2)	NE (1)
<i>Connecting Prior Knowledge</i>				
I am able to recall relevant prior concepts through varied activities.				
I use examples from past lessons to solve present problems.				
I can choose activities that relate my level of learning.				
I actively participate in discussions where I have previous knowledge.				
My learning is meaningful when I can connect it to the past lessons.				
<i>Considering learners' learning pace</i>				
I am able to complete tasks at a pace appropriate to my understanding.				

I can apply concepts independently based on my understanding.				
I can work with peers collaboratively without pressure.				
My teacher provides activities for slow, average, and fast learners.				
I can grasp the lesson before moving to new lessons.				
<i>Learning Experience</i>				
I actively participate in class activities without fear.				
I am confident to do the tasks when it meets my learning needs.				
I feel supported and guided by the teacher throughout learning.				
I enjoy and have positive attitude towards learning activities.				
I can freely express my ideas during group works.				

PART III. *CHALLENGES ENCOUNTERED BY THE TEACHERS, Adopted (Nurlankyzy & Elmira, 2023)*

Directions: Read each statement carefully. Put a check (✓) on the corresponding column of your choice.

Weight	Category	Verbal description
4	Highly Challenging (HC)	The challenges are always experienced by the teachers.
3	Moderately Challenging(MC)	The challenges are frequently experienced by the teachers.
2	Slightly Challenging (SC)	The challenges are sometimes experienced by the teachers.
1	Not Challenging at All (NCA)	The challenges are not

experienced by the teachers.

<i>Indicators</i>	HC (4)	MC (3)	SC (2)	NCA (1)
Large class size				
Lack of adequate teacher training				
Poor internet provider /connectivity				
Insufficient time				
Classroom management issues				
Learner's attitude toward learning				

CURRICULUM VITAE

CURRICULUM VITAE

Kiezl Che Yangco Lagare
Blk. 2 Lot 18 & 19 Villa Bonita Subd., Jugan, Consolacion, Cebu
kiezlche.yangco001@deped.gov.ph
9129379481

Personal Information

Sex	Female
Date of Birth	21-Jul-89
Placo of Birth	Calmante, Tudela, Cebu
Civil Status	Married
Citizenship	Filipino
Religion	Roman Catholic
Professional Skills	Instructional: Lesson Planning, Literacy Instruction Leadership: Student Government Coordination, Mentorship

Educational Attainment

Course	School	Address	Date Graduated
Master of Arts in Education Major in Management and Supervision	Felipe R. Verallo Memorial Foundation Inc.	Clotilde Hills, Dakit, Bogo City	2024
Bachelor of Elementary Education	Cebu Technological University - San Francisco Campus	Northern Poblacion, San Francisco, Camotes, Cebu	2011
Seconday Education	Immaculate Concepcion Institute of Tudela Incorporated	Southern Poblacion, Tudela, Cebu	2006
Elementary Education	Calmante Elementary School	Calmante, Tudela, Cebu	2002

Government Licensure Examination

Title	Rating	Place of Examination	Date
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Licensure Examination for Teachers (LET)	80.5	Southwestern University	23-Sep-11
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History of Employment

Position	Agency	Address	Inclusive Date
Teacher I	Department of Education - Lapu-Lapu City Division	B.M. Dimataga St. Poblacion, Lapu-Lapu City	September 19, 2012 - Present

Training and Seminar Attended

Title	Sponsoring Agency	Venue	Date
Bridging Gaps, Building Excellence: Strengthening Assessment and Instructional Practices for Literacy and Numeracy Achievement	Department of Education	Gun-ob Elementary School	November 19, 21 and 26, 2025
Enhancing Teaching Experience: Content and Pedagogy Training for Elementary Teachers	DepEd	Globeroom Pajo National High School	November 13-15, 2025
ARAL Program Seminar	DepEd	Alta Cebu Resort	October 20-21, 2025
School - Based Training of Teachers on the Revised K-12 Curriculum (Phase 2)	DepEd	Marigondon Elementary School	June 26-28, 2025
Empowering Educators: Strengthening Literacy and Numeracy, Leadership and Instructional Innovation	DepEd	Gun-ob Elementary School	November 27-29, 2024