TEACHING STRATEGIES FOR THE DEVELOPMENT OF MATHEMATICAL FUNDAMENTALS IN KS1 THROUGH THE MATATAG CURRICULUM: BASIS FOR CREATING INSTRUCTIONAL MATERIALS IN MATHEMATICS

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Research Title: **Teaching Strategies for the Development of Mathematical Fundamentals in KS1 through the MATATAG Curriculum: Basis for Creating Instructional Materials in Mathematics**

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Abstract

This study investigated effective teaching strategies for enhancing mathematical fundamentals in Key Stage 1, specifically in Kindergarten and Grade 1, under the newly implemented MATATAG Curriculum. Anchored on the principle that early numeracy forms the foundation for future academic success. The research addressed the gap in instructional practices within the context of this new curriculum. The significance of the study evaluating how current approaches and pedagogical innovations can enhance young learners' mathematical fundamental skills. This study employed a descriptive-survey research design; quantitative data were collected from Kindergarten and Grade 1 teachers in the districts of Catanauan, Mulanay, and San Narciso, Quezon. It focused on evaluating teaching strategies such as differentiated instruction, technology integration, experiential learning, and collaborative learning, assessing the effectiveness in developing numeracy skills of the pupils. The findings of the study indicated that these strategies positively influenced pupils' engagement and learning outcomes, highlighting the importance of an interactive and hands-on teaching-learning process. Based on these findings, the study developed instructional materials, such as a workbook, to support children in developing mathematical fundamentals. It contains a variety of exercises and activities focused on building skills and mathematical concepts. This study intended to support educators in enhancing teaching methods and improving learning outcomes aligned with the MATATAG Curriculum.

Keywords: Teaching strategies, mathematical fundamentals, instructional materials

INTRODUCTION

The early childhood mathematics program is a vital stepping stone for future math instruction. The start of a child's mathematics education is extremely important. Youngster must explore and learn the mathematical ideas and concepts present in their environment during the formative years of their life. It promotes young children in developing their critical thinking, reasoning, and worldwide, both inside and outside the classroom, which eventually helps them establish a solid basis for their academic success (Onoshakpokaiye, 2020). Mathematics is one of the most meaningful learning because we use it in our daily lives. It is very important, as early as kindergarten, to develop fundamental skills in mathematics. We need to identify the various strategies for effective teaching to enhance learning outcomes.

Cardino et al. (2020) stated that determining students' learning styles will be a great help to teachers in designing and implementing a particular strategy that suits them. Teachers will be guided in developing diverse tactics by an understanding of the diversity of pupils and their various learning styles. Knowing students' learning styles is crucial for designing effective educational strategies that accommodate learning needs. By identifying their personal preferences and implementing strategies that suit their learning styles and preferences, teachers can create more engaging and effective instructional materials that enhance the learning experiences of all students.

Based on Department Order No. 010, s. 2024 – Policy Guidelines on the Implementation of the MATATAG Curriculum, under the Kindergarten Curriculum Guide, there are six developmental domains, and one of these is cognitive development. This implies that learners are expected to develop thinking skills, and insights into patterns of mathematics, concept of numbers, length, capacity, mass, and time using concrete objects or materials, and apply this meaningfully in their daily experiences through the provision of varied manipulative activities to help them see relationships and interconnections in math and enable them to deal flexibility with mathematical ideas and concept (MATATAG Curriculum Guide). In addition, the main goal of the curriculum is for Filipino learners to become mathematically proficient and critical problem solvers. The curriculum intends to develop among the learners the proficiency in solving mathematical problems critically, grounded on a strong conceptual knowledge, strategic use of mathematical skills and

processes, desirable values, and a proper disposition in mathematics, thus enabling them to become productive and successful 21st-century citizens.

Despite the positive outcomes of the MATATAG Curriculum, challenges such as disparities in resource allocation and the transition process for educators and students were identified. Addressing these challenges will require ongoing support, investment, and collaboration among education stakeholders. In light of these findings, it is evident that the MATATAG Curriculum has the potential to significantly improve educational quality and promote equity in the Philippine education system (Kilag et al, 2024). For the success of the MATATAG Curriculum implementation, various supports are needed, such as instructional materials that are suitable for the learners.

Although different teaching strategies are being used by the teachers, there is still a significant research gap concerning the use of these strategies. Based on the study of Cardino and Ortega-Dela Cruz (2020), one of the challenges in the teaching-learning process is knowing the most effective approach and strategies that are also in line with the learning styles of the pupils. Since the MATATAG Curriculum is just being implemented this school year, it might not fully explore the teaching strategies that are effective in enhancing mathematical skills. With that, the researcher decided to explore and study to identify the best practices and teaching strategies for the development of mathematical fundamentals of the pupils in Key Stage 1, specifically in Kindergarten and Grade 1. Since a lot of students are struggling in mathematics because of numerous factors that affect their learning, there is a need for further studies to solve this matter. In early childhood, many pupils have difficulty learning basic math skills that hinder to more complex ideas. This study aims to help students who are struggling in mathematics by highlighting teaching strategies for the development of mathematical fundamentals as early as kindergarten and Grade 1. If the mathematical fundamental skills are developed in early childhood, this will help the pupils in learning more complex ideas and skills in mathematics.

Through evaluating instructional approaches, we can determine which of these are effective in the teaching and learning process that will help the students develop their fundamental skills in mathematics. In the same way, one can innovate the strategies to improve teaching practices that cater to the needs of learners for better learning outcomes. In addition, with the advancement in educational practices and technology, exploring innovative methods, improving the learning guide, and various instructional materials that enhance teaching the mathematics subject, making learning more engaging and effective.

Purpose of the Research

This study aimed to assess the strategies of teaching mathematics through the MATATAG Curriculum to develop and improve fundamental skills of kindergarten and grade 1 pupils. As early childhood education plays a crucial role in shaping their mathematical understanding, it is essential to explore both current approaches and innovative strategies, improve the learning guide, and create various instructional materials to enhance the numeracy of the pupils.

The following objectives served as guide in this study:

1. Determine the teacher's demographic profile in terms of the following:
   1.1. Sex;
   1.2. Age;
   1.3. Highest Educational Attainment;
   1.4. Length of Service; and
   1.5. School size.
2. Analyze the level of utilization of the teaching strategy based on the Matatag curriculum in terms of:
   2.1. Differentiated Instruction;
   2.2. Technology Integration;
   2.3. Experiential Learning; and
   2.4. Collaborative Learning.
3. Assess challenges experienced by teachers in the utilization of the teaching strategy in terms of:
   3.1. Lack of Resources;
   3.2. Insufficient Training;
   3.3. Struggling Learners; and
   3.4. Classroom Management Issues.
4. Evaluate the performance of the pupils in terms of:
   4.1. Number, color, and shape recognition;
   4.2. Understanding of Quantity;

4.3. Patterns and Sorting;
4.4. Measurement Concepts; and
4.5. Basic Operations.

5. Evaluate the significant difference in teaching strategy when grouping according to teaching profile.
6. Assess the significant relation between teaching strategies and student performance.
7. Assess the significant relation between teaching strategies and challenges experienced by teachers.

Significance of the Research

This study aimed to provide insights that will help pupils, parents, teachers, and other researchers about the impact of various teaching methods on the development of mathematical fundamentals.

Pupils. This study will help pupils develop fundamental skills in mathematics. By implementing effective strategies, pupils are more likely to develop math skills, which serve as a foundation of future academic success. Effective teaching strategies can make mathematics more engaging, fostering a positive attitude towards the subject. By using varied strategies, pupils develop fundamental skills and critical thinking. And it will boost their confidence and encourage them to study more complex learning in mathematics, setting them up for success in their academic performances.

Parents. This will provide some information on how they help their children develop their fundamental skills to improve learning in mathematics. This will enhance their understanding and involvement in their children's mathematical education and give them ideas about the Matatag curriculum and its goals, allowing them to better support their children. This study fosters better communication between parents and teachers, promoting a collaborative approach to learning. It will also help the parents to gain confidence in helping their children with math, leading to a more supportive home learning environment, empowering them to play a more active role in their children's mathematical development, and enhancing their fundamental skills in mathematics.

Teachers. This will help the teachers to enhance their instructional practices in mathematics. The research aims to enhance teaching strategies that provide effective methods for teaching mathematical fundamentals. Teachers will gain insights into how to align their teaching with the Matatag curriculum, ensuring consistency and relevance. This will equip teachers with strategies to address diverse learning styles and needs of the students. By implementing effective strategies, teachers can enhance student engagement and achievement, encourage collaboration, and motivate learners to study more complex ideas in mathematics.

Future Researchers. This study will help other researchers with related topics as their guide and reference for their studies. The findings will provide the basis for subsequent studies on teaching strategies in early mathematics education. The research may highlight areas that need further investigation, guiding future studies on effective learning strategies. This can serve as a valuable resource for advancing knowledge and innovation in early mathematics education.

METHODS

Research Design/Research Instrument/Data Gathering Procedure

This study employed a descriptive-survey type of research method to collect data that describes characteristics of a population. This method is used for collecting data to describe the characteristics and practices of the teachers regarding current teaching strategies. Since the goal of the study is to gain a clear understanding of existing practices and their effectiveness, the descriptive-survey method allows for a comprehensive assessment of the current teaching approaches in early mathematics education. It involved gathering information through questionnaires, interviews, or observations to capture a snapshot of opinions, behaviors, and demographic details. The main goal was to provide information about the subject to study, without manipulating variables. It involved the collection of quantitative information. This method was used to identify teaching strategies for the development of mathematical fundamentals in Key Stage 1, specifically in kindergarten and grade 1, through the MATATAG curriculum for better learning outcomes.

The researcher used questionnaires to gather information relevant to the study. It consists of sets of questions for gathering information from kindergarten and grade 1 teachers as respondents. This questionnaire served as a written interview to get important information used in this study. The questionnaires began with the demographic profile of the teachers and focused on the level of utilization of teaching strategies, assessed the challenges experienced by the teachers, and evaluated the performance of the pupils with the approaches used in teaching kindergarten and grade 1 pupils. This aimed to develop their mathematical fundamentals for them to become ready for more complex learning in mathematics.

The research employed a structured data-gathering procedure in collecting data on teaching strategies for developing mathematical fundamentals in kindergarten. After setting the goal and objectives, the researcher developed research questions, then, after the adviser's approval, presented them to the validators for further checking. The validators are Master Teachers of Kindergarten and Grade 1 who are knowledgeable in this field. After validating the questionnaire, pilot testing was conducted among 10 Kindergarten and Grade 1 teachers from another district to check the validity of the instrument. Before conducting an interview, the researcher sought permission from the authorities to gather data. The data gathered were stored confidentially, organized, and analyzed using quantitative methods. The results were summarized then conclusions and recommendations were made based on the findings from the collected data.

The research aimed to develop instructional materials, such as a workbook, to support kindergarten and grade 1 pupils in developing mathematical fundamentals. This contained a variety of exercises and activities focused on building skills that children would need for future academic success. The researcher used English and Filipino (Tagalog) instructions in developing these instructional materials to make them user-friendly and easier to understand. This will help bridge the gap between their home language and formal education, since they are only in the beginning stage of formal education. The process of developing this workbook began with an understanding of the guidelines in Matatag Curriculum, identifying the core mathematical concepts, such as color, shapes, and number recognition, patterns and sorting, measurement, and basic operations that are essential for early childhood education. The workbook was formulated to provide clear instructions, engaging visuals, and interactive activities to support development and build a solid mathematical foundation.

Respondents/Units of analysis/Subjects of the Study

The selection of respondents for this study was carefully considered to ensure a comprehensive understanding of the teaching strategies used in the development of mathematical fundamentals for Kindergarten and Grade 1 pupils. The target population of this study is composed of 104 kindergarten teachers and 130 grade 1 teacher from the Districts of Catanauan, Mulanay, and San Narciso, Quezon, with a total of 73 elementary schools. The respondents consisted of both experienced and newly hired teachers who brought different perspectives on teaching strategies and approaches, specifically under the newly implemented Matatag Curriculum. Their collective insights provided a comprehensive view about the demographic profile of the teachers and the level of utilization of teaching strategies, assessed the challenges experienced by the teachers, and evaluated the performance of the pupils with the approaches used in teaching kindergarten and grade 1 pupils that aim to develop the mathematical fundamentals of the pupils. This study covered the School Year 2024-2025. By engaging teachers, the study aimed to contribute to the ongoing process of improving teaching and learning in mathematics, addressing both challenges and opportunities that arise in the development of mathematical foundations for young learners. Therefore, the selection of the respondents was essential to gain a balanced understanding about current practices, challenges, and areas for improvement in Kindergarten and Grade 1 levels within the context of the Matatag Curriculum.

Sampling Design and Procedures

The respondents of this study were the kindergarten and grade 1 teachers from the Districts of Catanauan, Mulanay, and San Narciso. The researcher used a cluster sampling technique where the population was divided into separate groups, also known as clusters, and a random sample of these clusters was selected. Then, a random sample of members within the chosen clusters answered the questionnaires. Simkus (2023) defines cluster random sampling as a probability sampling method where researchers divide a large population into smaller groups known as clusters, and then select randomly among the clusters to form a sample.

The researcher identified the schools, then the total number of kindergarten and grade 1 teachers to determine the entire population of public schools in the district of Catanauan, Mulanay, and San Narciso, Quezon. After that, 30% of the population, along with a 5% buffer, was selected to be the respondents for gathering information through questionnaires. This 5% buffer was included to complete the response, as some of the initial 30% were unwilling to participate in the study. After gathering information, the researcher analyzed the data collected about the demographic profile of the teachers and the level of utilization of teaching strategies, assessed the challenges experienced by the teachers, and evaluate the performances of the pupils with the approaches used in teaching kindergarten and grade 1 pupils that aim to develop mathematical fundamental skills.

Research Locale/Study Site

This research was conducted in the School Division of Quezon Province, specifically in the Districts of Catanauan, Mulanay, and San Narciso. The selection of schools and teachers as respondents of the study involved implicit stratification, taking into account various considerations such as accessibility of the schools or having an internet connection, and the willingness of teachers to participate in the study. This provided a comprehensive understanding of the demographic profile of the teachers and the level of utilization of teaching strategies, assessed the challenges experienced by the teachers, and evaluated the performance of the pupils. The findings helped to create instructional materials in mathematics.

Assumptions or Hypotheses

The hypotheses of the study were the following:

There is no significant difference in teaching strategy when grouping according to teaching profile.

There is no significant relation between teaching strategies and student performance.

There is no significant relation between teaching strategies and challenges experienced by teachers.

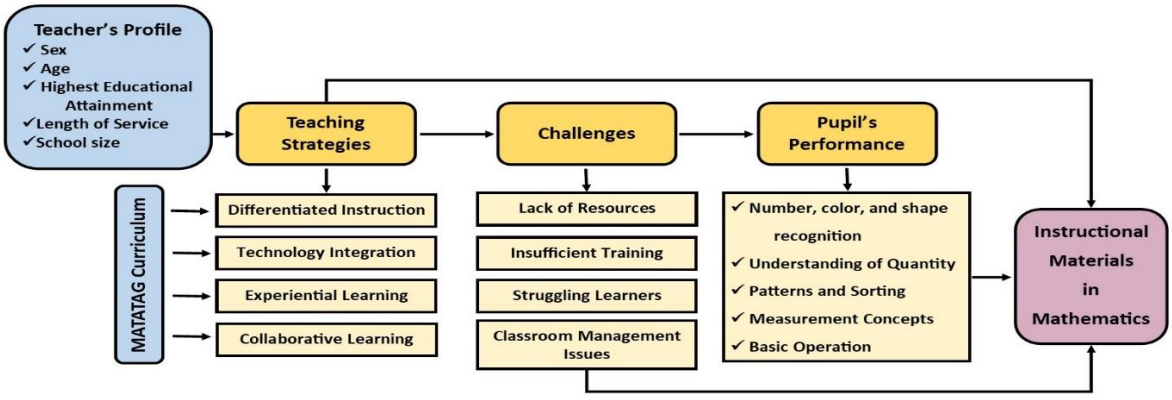
Research Paradigm/Conceptual Framework

This conceptual framework serves as a guide in this study on what teaching strategies will help the kindergarten and grade 1 pupils in developing their fundamental skills in mathematics by evaluating current approaches and innovations. This study will investigate the impact of various teaching strategies and explore the challenges encountered by the teachers. This will provide a visual representation of the variables, process, and what will be the desired output of the study.

Figure 1 shows the flow of the study starting with the teacher's demographic profile, which provides insights into the characteristics of the study population. The researcher will gather information from other studies about early childhood mathematics, mathematical fundamentals, the MATATAG Curriculum, teaching strategies, challenges in the teaching-learning process, and students' performance. Then, develop a questionnaire that will be used as a tool in gathering information from the respondents. The questionnaire will be validated by the expert. The researcher will ask permission from the authority before gathering the data. Respondents are kindergarten and grade 1 teachers from the districts of Catanauan, Mulanay, and San Narciso, Quezon, under the school year 2024-2025. They will answer the questionnaires about teaching strategies under the MATATAG curriculum, such as differentiated instruction, technology integration, experiential learning, and collaborative learning. The challenges experienced by the teachers in the utilization of different teaching approaches like a lack of resources, insufficient training, struggling learners, and classroom management issues. Another objective of this study is to determine the performance of the pupils in terms of number, color, and shape recognition, understanding of quantity, patterns, and sorting, measurement concepts, and basic operations. After gathering data, the researcher will create instructional materials in Mathematics based on the findings from the data collected. Instructional materials like workbooks will help the pupils develop mathematical skills. It provides structured exercises and activities that will help them practice math concepts. This aims to develop the mathematical fundamentals of kindergarten and grade 1 pupils.

Figure 1

Research Paradigm of Teaching Strategies for the Development of Mathematical Fundamentals in KS1 through MATATAG Curriculum



RESULTS AND DISCUSSION

This section presents the data through tables about the results of data gathered, along with analysis and interpretation to identify different teaching strategies that will help pupils develop their mathematical fundamentals, and explains the outcome of the study from the following objectives. (1) Determine the teacher's demographic profile; (2) Analyze level of utilization of the teaching strategy based on the Matatag curriculum; (3) Assess challenges experienced by teachers in the utilization of the teaching strategy; (4) Evaluate the performance of the pupils; (5) Evaluate significant difference in teaching strategy when group according to teaching profile; (6) Assess the significant relation between teaching strategies and student performance; (7) Assess the significant relation between teaching strategies and challenges experienced by teachers.

The demographic profile of the teacher-respondents serves as a foundational aspect of understanding the context and diversity within the educational environment under study. Demographic characteristics such as gender, age, educational attainment, length of service, and school size are critical in examining patterns and drawing meaningful conclusions in educational research. These variables often influence teaching practices, professional development needs, and overall educational outcomes. Analyzing these characteristics provides valuable insight into the composition and potential perspectives of the participating teachers.

The data reveal that all respondents (100%) are female, indicating a gender-homogeneous sample, which reflects the typical makeup of early education staff but may limit the scope of perspectives in instructional strategy design. In terms of age distribution, most respondents fall within the 30–50 years old bracket (46%), followed by those below 30 years old (37%), and the smallest group being those 51 years old and above (17%). This suggests the findings are shaped by those in their professional prime, combining practical classroom experience with openness to innovation in teaching methods under the Matatag Curriculum. Regarding educational attainment, a greater portion of the teachers (63%) hold a bachelor's degree, while 37% have obtained a Master's degree. In terms of professional experience, 37% of the respondents have more than 10 years of service, 34% have between 4 to 10 years, and 29% have less than 4 years. This implies a knowledgeable group capable of contributing both practical and research-based insights to develop instructional materials and strategies. When categorized by school size, most teachers are from medium-sized schools (54%), with the rest coming from small (30%) and large schools (16%), suggesting that the instructional materials developed may be most applicable to similarly resource settings.

The predominance of female respondents highlights a potential gender imbalance in the teaching workforce within the study area, which may influence pedagogical dynamics and staff development initiatives. According to the study of Alfayez (2022), female teachers of the first three grades had a moderate level of mathematical proficiency, a good level of mathematical thinking skills. In addition, the study found a significant statistical positive correlation between mathematical proficiency and mathematical thinking skills among female teachers. The diverse age and service length distribution suggests a mix of novice and experienced educators, offering opportunities for mentorship and collaborative learning within schools. The relatively high proportion of teachers with a bachelor's degree signals a potential area for further professional advancement and graduate education support. Finally, the concentration of respondents from medium-sized schools might reflect regional school distribution or accessibility.

Table 1
Teacher-Respondent Demographic Profile

Profile	Group	Frequency	Percent
Gender	Female	70	100
Age	Below 30 years old	26	37
	30 – 50 years old	32	46
	51 years old and above	12	17
Highest Educational Attainment	Bachelor's Degree	44	63
	Master's Degree	26	37
	Total	70	100
Length of Service	0-3 years	20	29
	4-10 years	24	34

	more than 10 years	26	37
School Size	Small	21	30
	Medium	38	54
	Large	11	16
Total		**70**	**100**

The implementation of the Matatag Curriculum highlights the importance of adopting inclusive and adaptive teaching strategies, such as differentiated instruction, to meet the diverse learning needs of students. Differentiated instruction is particularly essential in mathematics education, where learners often demonstrate varying levels of readiness, interests, and learning profiles. This section presents the self-reported level of utilization of differentiated instruction among teacher-respondents, as measured by their agreement with key instructional practices aligned with the Matatag Curriculum. Understanding the extent of teachers' engagement with differentiated instruction provides insights into how well educational reforms are being integrated at the classroom level.

The overall average mean score of 4.55 indicates that teachers "Always" employ differentiated instruction strategies in their teaching practices. Among the individual statements, the highest-rated item was the necessity to adjust teaching methods based on pupils' abilities (M=4.76), reflecting a strong commitment to addressing individual learning needs. This is closely followed by the belief that differentiated instruction aids in developing pupils' fundamental mathematical skills (M=4.66) and the practice of assessing students' readiness for appropriate instruction (M=4.63). Other high-ranking behaviors include actively seeking new strategies (M=4.57), motivating pupils through diverse instructional methods (M=4.54), and incorporating self-directed learning opportunities (M=4.46). The lowest-rated statement, albeit still within the "Always" category, pertains to the use of differentiated instruction via technology (M=4.33), indicating a comparatively lower integration of digital tools in differentiated practices.

Students often show improvement in their performance through diversified instructions. Tailored approaches address individual learning styles, allowing students to engage in the teaching-learning process. Varied instructional methods keep students interested and motivated, making it easier to grasp and retain information. By tailoring lessons, it will help children to engage more deeply and meet individual needs, interests, and learning styles. It will boost their interest to participate actively and stay motivated. Differentiation allows children to work at their learning style, which leads for better understanding and improved performances.

Differentiated instruction is a strategy that can effectively meet the diverse needs of all students, leading to improved student achievement (Parsons et al., 2018).

Based on the study of Aguhayon & Pentang (2023), the results show that even in a short amount of time, differentiated instruction successfully addressed pupils' mathematical performance. Additionally, it gave a participant more self-assurance while responding to essential issues. The benefits of ongoing diversified instruction activities, especially for pupils who are struggling in mathematics. Differentiated mathematics instruction can increase student engagement and performance in the classroom, set them up for success in the future, and create a classroom environment that recognizes each student's unique learning style.

The consistent "Always" rating across all indicators suggests a high level of awareness and application of differentiated instruction among the teacher-respondents, signaling strong alignment with the goals of the Matatag Curriculum. The emphasis on adapting teaching to student ability and readiness underscores a learner-centered pedagogical approach. However, the relatively lower rating on technology integration suggests a potential area for professional development, particularly in leveraging digital tools to enhance differentiated instruction. Strengthening teachers' capacity in this area could lead to more innovative and accessible learning experiences, especially in increasingly digital learning environments. Future training programs and curriculum support should thus consider embedding technology use in differentiated instructional strategies to ensure holistic and modern teaching practices.

DepEd's Matatag represents a remarkable step forward in improving the quality of education in the Philippines. With a multifaceted approach, the program paves the way for a more competent, empathetic, and qualified generation of learners. By prioritizing foundational, inclusive, and empowering skills for teachers, this education reform has the potential to reshape the country's education landscape and help learners thrive in a world always changing (Cummins, 2021). The Matatag curriculum has significant advancements in enhancing the quality of education, particularly in mathematics. This curriculum aims to address the previous issues of rote learning by emphasizing critical thinking, problem-solving, and real-

world application of mathematical concepts. It focuses on deep comprehension rather than memorization, integrating learning into real-life scenarios. By promoting a more holistic and integrated approach to math education, the Matatag curriculum aims to produce students who are not only proficient in math but also capable of using it critically and creatively in various aspects.

Table 2
Teachers' Level of Utilization of the Teaching Strategy based on the Matatag Curriculum in terms of Differentiated Instruction

Statement	Mean	Verbal Interpretation	Rank
1. I need to adjust my teaching method depending on my pupils' abilities.	4.76	Always	1
2. I believe that differentiated instruction helps my pupils develop fundamental skills in mathematics.	4.66	Always	2
3. I am assessing my pupils' readiness to identify appropriate instruction.	4.63	Always	3
4. I seek out new strategies or resources for differentiated activities.	4.57	Always	4
5. I can motivate my pupils to actively participate using diversified instruction.	4.54	Always	5
6. I provide opportunities to my pupils for self-directed learning as part of differentiation.	4.46	Always	6
7. I do a reflection on the effectiveness of differentiated instruction practices.	4.43	Always	7
8. I am using differentiated instruction via technology.	4.33	Always	8
Average	**4.55**	**Always**	

Legend: *4.21 – 5.00 = Always* *3.41 – 4.20 = Often* *2.61 – 3.40 = Sometimes* *1.81 – 2.60 = Rarely* *1.00 – 1.80 = Never*

The Matatag Curriculum emphasizes the integration of technology in classroom instruction to foster 21st-century learning competencies. Technology integration in teaching not only enhances student engagement but also supports diverse learning modalities, facilitates access to resources, and improves assessment practices. This section presents the teacher-respondents' level of utilization of technology-based teaching strategies as part of their implementation of the Matatag Curriculum. Measuring how frequently technology is used in various instructional aspects provides valuable insight into the readiness of educators to adapt to digital learning environments and innovate pedagogical practices.

The overall average mean of 4.35 falls within the "Always" category, indicating a generally high level of technology integration among the teachers. The highest-rated item was the encouragement of pupil participation through technology (M=4.47), followed closely by the integration of technology in lesson planning and delivery (M=4.41). The use of laptops and projectors (M=4.37) and multimedia resources such as videos and podcasts (M=4.37) also received strong ratings, reflecting the teachers' efforts to enrich lesson content. Teachers also reported consistent use of technology for assessment (M=4.36) and evaluation of tool effectiveness (M=4.36). Professional development participation in technology integration was also rated highly (M=4.30), suggesting ongoing efforts for improvement. However, the lowest-rated item was the provision of student-led technology activities (M=4.14), which, although still within a positive range, falls under the "Often" category rather than "Always."

The findings indicate that teachers are effectively integrating technology into their instructional practices, particularly for lesson delivery, assessment, and student engagement. This aligns with the Matatag Curriculum's goal of cultivating digitally literate learners. However, the relatively lower rating in providing students with opportunities to actively use technology highlights a potential gap between teacher-led and student-centered technological engagement. This suggests the need to shift from merely using technology for content delivery toward empowering students as active creators and explorers through technology. Professional development efforts may need to focus more on designing student-driven, tech-integrated learning activities to maximize the transformative potential of educational technology in fostering independent and collaborative learning. Integration also relates to several dynamic factors, including effective practices, technological aspects of new tools, potential to transform learning, as well as enabling new forms of teaching and learning practices (Howard et al.,2019).

As mathematics is a key school subject, and one which is problematic for many students, it is important to understand if and how digital tools can help improve students' learning outcomes and relevant learner support. Second, digital tools in combination with sound pedagogy have been argued to have the

potential to facilitate the development of several generic learner skills, such as critical thinking and problem-solving (Viberg & Mavroudi, 2018).

Table 3
Teachers' Level of Utilization of the Teaching Strategy based on the Matatag Curriculum in terms of Technology Integration

Statement	Mean	Verbal Interpretation	Rank
1. I encourage my pupils to actively participate in the discussion using technology integration.	4.47	Always	1
2. I integrate technology into my lessons.	4.41	Always	2
3. I am using a laptop and a projector in the presentation of my lessons.	4.37	Always	3.5
4. I regularly integrate multimedia (videos, podcasts, etc.) into my lessons.	4.37	Always	3.5
5. I am using technology as a tool in assessing my pupils.	4.36	Always	5.5
6. I evaluate the effectiveness of technology tools in enhancing the learning of my pupils.	4.36	Always	5.5
7. I do participate in professional development focused on technology integration.	4.30	Always	7
8. I provide opportunities to my pupils to do an activity with the use of technology.	4.14	Often	8
Average	**4.35**	**Always**	

Legend: *4.21 – 5.00 = Always* *3.41 – 4.20 = Often* *2.61 – 3.40 = Sometimes* *1.81 – 2.60 = Rarely* *1.00 – 1.80 = Never*

Experiential learning is a core pedagogical approach emphasized in the Matatag Curriculum, aiming to bridge theoretical knowledge with practical application. This strategy encourages learners to engage in meaningful activities that simulate real-life contexts, promoting critical thinking, collaboration, and self-reflection. The effective use of experiential learning in classroom instruction not only enhances student engagement but also deepens understanding through active participation. This section presents the extent to which teacher-respondents utilize experiential learning strategies, offering insight into how well this approach is embedded in their daily teaching practices.

The overall average mean score of 4.42 indicates that teachers "Always" apply experiential learning strategies in their teaching. The highest-rated practice is the integration of real-world problems into lessons (M=4.54), suggesting a strong emphasis on contextualizing learning for greater relevance and application. This is followed by engaging pupils in collaborative experiential activities (M=4.46) and facilitating hands-on projects (M=4.44), highlighting a commitment to interactive and student-centered learning. Assessment through experiential learning (M=4.43) and opportunities for student reflection (M=4.40) are also frequently practiced. Lower-ranked, though still positively rated, practices include teachers' self-reflection on pupil performance (M=4.39), participation in professional development related to experiential learning (M=4.36), and the general incorporation of experiential activities into lessons (M=4.34).

The findings demonstrate a strong and consistent integration of experiential learning strategies among the teacher-respondents, affirming their alignment with the learner-centered vision of the Matatag Curriculum. Teachers are not only incorporating real-life contexts into instruction but are also promoting collaboration and reflective thinking, which are key components of experiential education. However, the slightly lower ratings on professional development and consistent incorporation into lessons suggest areas where additional institutional support may be beneficial. Investing in sustained training and curriculum planning support could further enhance teachers' capacity to embed experiential learning systematically and effectively across subject areas. Encouraging deeper reflection and broader implementation can also lead to improved learning outcomes and more empowered learners. Reyes et al. (2019) found out in their study that teachers can help their students develop concepts using visual aids such as local games, materials that are easily accessible in the community, or photos of scenes or environments that illustrate math topics. An alternative teaching tool could be made using homemade educational materials. It has a significant role in enhancing the learning experience for young learners by providing a concrete representation that clarifies information. It will boost the interest of the pupils through hands-on activities and encourage creativity for better learning outcomes. Therefore, visual aids and local materials are essential tools and not only facilitate learning but also enrich the educational experience for young learners by making it more interactive, relevant, and engaging.

Table 4
Teachers' Level of Utilization of the Teaching Strategy based on the Matatag Curriculum in terms of Experiential Learning

Statement	Mean	Verbal Interpretation	Rank
1. I integrate real-world problems into my lessons for experiential learning.	4.54	Always	1
2. I can engage my pupils in collaborative experiential learning activities.	4.46	Always	2
3. I allow my pupils to do hands-on projects to develop their skills.	4.44	Always	3
4. I assess the learning of my pupils through experiential learning activities.	4.43	Always	4
5. I regularly allow my pupils to reflect on their experiential learning experiences.	4.40	Always	5
6. I am reflecting on the performances of my pupils in using the experiential learning approach.	4.39	Always	6
7. I am participating in professional development related to experiential learning.	4.36	Always	7
8. I incorporate experiential learning activities in my lessons.	4.34	Always	8
Average	**4.42**	**Always**	

Legend: *4.21 – 5.00 = Always* *3.41 – 4.20 = Often* *2.61 – 3.40 = Sometimes* *1.81 – 2.60 = Rarely* *1.00 – 1.80 = Never*

Collaborative learning is a cornerstone of learner-centered education, as emphasized in the Matatag Curriculum, fostering active participation, communication, and teamwork among pupils. Through group tasks and shared problem-solving, students develop not only cognitive skills but also social-emotional competencies essential for holistic growth. The successful implementation of collaborative learning requires intentional design, facilitation, and reflection by teachers. This section presents the level of utilization of collaborative learning strategies among teacher-respondents, providing insight into how well this approach is operationalized in classrooms under the Matatag framework.

The overall average mean score of 4.45 indicates that teachers "Always" integrate collaborative learning into their instructional practices. The top-rated practices include executing collaborative learning activities (M=4.54) and reflecting on their effectiveness (M=4.54), showing a strong commitment to both implementation and continuous improvement. Assessing pupil performance during collaborative tasks also received a high mean score (M=4.51), followed by using collaborative discussions (M=4.46) and enhancing problem-solving skills through group work (M=4.44). Participation in professional development focused on collaborative strategies (M=4.41) further suggests sustained teacher engagement with this approach. The slightly lower-ranked items, though still within the "Always" range, include providing structured group roles (M=4.40), allowing group or paired activities (M=4.39), and enabling student-led collaboration (M=4.37), suggesting some variability in how deeply collaborative learning is student-directed.

The consistently high ratings across all items demonstrate a robust integration of collaborative learning among teachers, aligning well with the Matatag Curriculum's emphasis on cooperative learning environments. Teachers are not only facilitating group activities but also engaging in reflective and evaluative practices to ensure effectiveness. However, the slightly lower scores on student-led collaboration and role-structuring indicate areas for further growth in empowering learners to take more ownership of the collaborative process. To deepen the impact of collaborative learning, professional development programs could place greater emphasis on designing student-centered, structured group work and fostering leadership among pupils. Supporting teachers in these areas can further elevate classroom collaboration from teacher-directed to truly co-constructed learning experiences. Peer tutoring is a successful strategy for teaching mathematics and fostering mathematical achievement. It is an effective teaching-learning strategy where students help each other understand content and develop skills. This approach provides strengths of social interaction and collaboration, fostering a supportive learning environment and enhancing learning outcomes (Clapp, 2022).

Numerous studies have explored the positive effects of collaborative learning on mathematics achievement. For instance, Carlos et al. (2021) investigated the impact of collaborative learning techniques tailored to grade-specific mathematics achievement among elementary students. Their findings showed

that collaborative approaches significantly improved math scores and effectively addressed grade-specific learning objectives.

Table 5
Teachers' Level of Utilization of the Teaching Strategy based on the Matatag Curriculum in terms of Collaborative Learning

Statement	Mean	Verbal Interpretation	Rank
1. I am executing collaborative learning activities in my lessons.	4.54	Always	1.5
2. I am reflecting on the effectiveness of collaborative learning experiences for my pupils.	4.54	Always	1.5
3. I assess my pupils' performances during collaborative activities.	4.51	Always	3
4. I am implementing the lessons in collaborative discussion.	4.46	Always	4
5. I am using collaborative learning to enhance problem-solving skills.	4.44	Always	5
6. I am participating in professional development focused on collaborative learning strategies.	4.41	Always	6
7. I provide structured roles within collaborative groups.	4.40	Always	7
8. I allow my pupils to do activities in pairs or groups.	4.39	Always	8
9. I allow my pupils to lead collaborative learning activities.	4.37	Always	9
Average	**4.45**	**Always**	

Legend: *4.21 – 5.00 = Always* *3.41 – 4.20 = Often* *2.61 – 3.40 = Sometimes* *1.81 – 2.60 = Rarely* *1.00 – 1.80 = Never*

The Matatag Curriculum promotes a dynamic and responsive approach to instruction, encouraging teachers to adopt varied pedagogical strategies such as differentiated instruction, technology integration, experiential learning, and collaborative learning. These strategies are designed to create inclusive, engaging, and effective classroom environments that cater to diverse learners and develop essential 21st-century competencies. Table 6 presents a summary of the overall level of utilization of these teaching strategies by teacher-respondents, offering a holistic view of instructional practices aligned with the curriculum's core philosophy.

The general average mean score of 4.44 indicates that teachers "Always" implement the four key teaching strategies advocated by the Matatag Curriculum. Among the strategies, Differentiated Instruction received the highest mean score (M=4.55), ranking first and highlighting teachers' strong commitment to customizing teaching based on students' individual needs. Collaborative Learning followed closely with a mean of 4.45, indicating frequent use of group-based activities and peer learning structures. Experiential Learning ranked third (M=4.42), reflecting consistent efforts to connect classroom lessons to real-world experiences. Technology Integration ranked fourth with a mean of 4.35, still within the "Always" category, though slightly less emphasized compared to the other dimensions.

The consistently high scores across all dimensions demonstrate that teachers are effectively aligning their instructional practices with the Matatag Curriculum's learner-centered framework. The strong emphasis on differentiated and collaborative strategies suggests that teachers are prioritizing personalized learning and student engagement. However, the relatively lower utilization of technology integration, while still positive, points to potential areas for growth. Enhancing teacher training in educational technology and ensuring access to adequate digital resources can further elevate instructional quality. Overall, these results reflect a positive trajectory in curriculum implementation, with opportunities for continuous improvement to further support holistic and future-ready education.

Table 6
Teachers' Overall Level of Utilization of the Teaching Strategy based on the Matatag Curriculum

Dimension	Mean	Verbal Interpretation	Rank
Differentiated Instruction	4.55	Always	1
Technology Integration	4.35	Always	4
Experiential Learning	4.42	Always	3

Collaborative Learning		4.45	Always	2
General Average		**4.44**	**Always**	
Legend:	*4.21 – 5.00 = Always*	*3.41 – 4.20 = Often*	*2.61 – 3.40 = Sometimes*	
	1.81 – 2.60 = Rarely	*1.00 – 1.80 = Never*		

The successful implementation of teaching strategies under the Matatag Curriculum is influenced not only by pedagogical competence but also by the availability of adequate instructional resources. A lack of materials, technological tools, and funding can hinder teachers' ability to deliver effective, engaging, and inclusive instruction. This table presents the self-assessed challenges faced by teachers, specifically about resource constraints, shedding light on how these limitations impact their ability to fully utilize the prescribed teaching strategies.

The overall average mean score of 3.66, interpreted as “Often”, indicates that teachers regularly experience challenges related to the lack of resources. The highest-rated concern was the belief that inadequate resources negatively affect pupil learning outcomes (M=4.20), followed by the perception that such shortages reduce student engagement and participation (M=3.96). Teachers also often rely on personal funds for classroom supplies (M=3.69) and face difficulties in acquiring materials for experiential learning (M=3.69). Concerns about outdated or insufficient teaching resources (M=3.59), and the need to modify lesson exemplars (M=3.56) or change planned activities (M=3.53) due to resource limitations were also prominent. Lower mean scores, though still notable, were observed in statements regarding the general lack of materials (M=3.49), instructional supplies (M=3.51), and issues in accessing technology (M=3.37), the latter of which fell into the “Sometimes” category.

The findings reveal that while teachers are committed to implementing the strategies of the Matatag Curriculum, resource-related challenges pose significant barriers to full execution. Frequent modifications to lesson plans, reliance on personal financial contributions, and insufficient or outdated materials limit instructional flexibility and innovation. These challenges are particularly detrimental to resource-intensive approaches like experiential and technology-integrated learning. Addressing these issues requires stronger institutional support, including adequate budget allocation, updated instructional materials, and improved access to classroom technology. In addition, most of the problems in the textbooks require low-level cognitive skills. In this context, it is a remarkable result that the use of materials is stated as an ongoing problem despite its benefits in primary school (Usta & Ipek, 2019). Textbooks play a central role in early childhood mathematics education, but there are several challenges associated that affect the learners to develop their fundamental skills and learn concepts in mathematics. Textbooks are sometimes too advanced for young learners, lack diverse examples, and do not cater wide variety of learning needs. Some children may require additional challenges, while others need more foundational support. Without differentiated activities, some students may struggle while others may become disengaged because the materials are not challenging enough.

Table 7

Teachers’ Self-Assessment on the Challenges Experienced in the Utilization of Teaching strategies in terms of Lack of Resources

Statement	Mean	Verbal Interpretation	Rank
1. I believe that a lack of resources negatively impacts the learning outcomes of my pupils.	4.20	Often	1
2. I feel that a shortage of resources can affect the engagement and participation in the teaching-learning process.	3.96	Often	2
3. I rely on my funds to have classroom supplies and other resources.	3.69	Often	3.5
4. I encounter difficulties in obtaining necessary materials for hands-on or experiential learning.	3.69	Often	3.5
5. I feel that the availability of teaching resources (textbooks, manipulatives, etc.) is outdated or inadequate.	3.59	Often	5
6. I need to modify my lesson exemplar because of a lack of resources.	3.56	Often	6
7. I changed the activity planned due to a lack of resources.	3.53	Often	7
8. I experience a lack of classroom supplies and instructional materials.	3.51	Often	8
9. I lack sufficient materials to implement different strategies in my lessons.	3.49	Often	9
10. I encountered issues in accessing technology (computer or laptop) in the classroom.	3.37	Sometimes	10
Average	**3.66**	**Often**	
Legend: *4.21 – 5.00 = Always*	*3.41 – 4.20 = Often*	*2.61 – 3.40 = Sometimes*	

1.81 – 2.60 = Rarely *1.00 – 1.80 = Never*

Ongoing professional development is essential for equipping teachers with the knowledge and skills needed to implement innovative and learner-centered teaching strategies. In the context of the Matatag Curriculum, which introduces pedagogical shifts and emphasizes 21st-century learning approaches, the availability of sufficient and targeted training becomes even more critical. This table explores teachers' self-assessment of the challenges they face due to insufficient training, highlighting the impact on instructional delivery and learner support.

The overall average mean score of 3.08, interpreted as "Sometimes," indicates that teachers occasionally experience challenges related to insufficient training in implementing the teaching strategies promoted by the Matatag Curriculum. The top concern was the belief that a lack of training hampers their ability to support struggling learners (M=3.40), followed by a perceived decline in confidence due to limited training (M=3.29). Other concerns include inadequate preparation to implement effective strategies (M=3.19), difficulty adjusting to curriculum changes (M=3.16), and inability to address diverse learner needs (M=3.09). Challenges related to technology integration (M=3.07), managing diversity (M=3.01), and handling specific classroom situations (M=3.00) were also noted. The lowest-scoring items, though still within the "Sometimes" range, included lack of confidence in teaching skills (M=2.99), hesitancy to apply new strategies (M=2.97), and difficulty teaching unfamiliar topics (M=2.91).

While the challenges related to insufficient training are not overwhelmingly frequent, their presence signals a need for targeted interventions. The responses suggest that gaps in professional development may undermine teachers' confidence, preparedness, and responsiveness to student needs, particularly among struggling and diverse learners. In the context of the evolving Matatag Curriculum, teachers must be well-equipped to adapt to pedagogical changes, integrate technology, and apply differentiated strategies effectively. Educational institutions and stakeholders should prioritize continuous, curriculum-aligned training programs that focus on emerging strategies, classroom innovation, and inclusive education. Addressing these professional development gaps will not only boost teacher competence and morale but also enhance instructional quality and learner outcomes across various contexts. However, the successful implementation of the Matatag Curriculum is not without its challenges. Initial pilot runs have revealed various obstacles, including the need for appropriate implementation approaches, inadequate government policies for inclusive education, and technical problems in implementation (Javier, 2023). Moreover, issues such as teacher readiness, lack of access to information resources, and infrastructural limitations pose significant challenges to the effective rollout of the curriculum (Macasero, 2023).

Table 8

Teachers' Self-Assessment on the Challenges Experienced in the Utilization of Teaching strategies in terms of Insufficient Training

Statement	Mean	Verbal Interpretation	Rank
1. I believe a lack of training affects my ability to support struggling learners.	3.40	Sometimes	1
2. I feel that insufficient training has an impact on my confidence as a teacher.	3.29	Sometimes	2
3. I lack adequate training to implement effective teaching strategies.	3.19	Sometimes	3
4. I feel unprepared for the changes in the curriculum due to a lack of training.	3.16	Sometimes	4
5. I feel I am unable to address pupils' needs due to insufficient training.	3.09	Sometimes	5
6. I encounter difficulties integrating technologies due to a lack of training and seminars.	3.07	Sometimes	6
7. I feel inadequately prepared to manage diverse learners due to training gaps.	3.01	Sometimes	7
8. I experience frustration with how to handle a specific situation because of insufficient training.	3.00	Sometimes	8
9. I experience a lack of confidence in my teaching skills because of insufficient training.	2.99	Sometimes	9
10. I'm hesitant to implement new strategies due to limited training.	2.97	Sometimes	10
11. I struggle in teaching topics that I am not prepared to teach due to a lack of training.	2.91	Sometimes	11.5

12. I find it hard to engage my pupils effectively due to insufficient professional development.			2.91	Sometimes	11.5
Average			**3.08**	**Sometimes**	
Legend:	*4.21 – 5.00 = Always*	*3.41 – 4.20 = Often*	*2.61 – 3.40 = Sometimes*		
	1.81 – 2.60 = Rarely	*1.00 – 1.80 = Never*			

One of the central tenets of the Matatag Curriculum is its emphasis on inclusive and responsive instruction, especially for learners who experience difficulties in core subject areas such as mathematics. Struggling learners present unique instructional and behavioral challenges that require specialized strategies, emotional resilience, and instructional adaptability from teachers. Table 9 explores how teachers perceive and experience the challenges associated with supporting struggling learners in their classrooms, particularly in the context of implementing varied teaching strategies.

The overall average mean score of 3.65, interpreted as “Often,” indicates that teachers frequently encounter challenges in dealing with struggling learners. The most prominent concern was the consistent presence of pupils struggling in mathematics (M=4.03), followed by difficulty in tailoring instruction to meet their specific needs (M=3.84). Teachers also observed that these learners contribute to higher rates of absenteeism (M=3.76) and increase teacher workload (M=3.73). Behavioral management was another concern, with teachers reporting difficulties managing behaviors (M=3.64), class pacing (M=3.63), and emotional exhaustion (M=3.54) when working with such learners. Motivation (M=3.54), maintaining a positive attitude (M=3.51), and general classroom management (M=3.47) were also cited as ongoing issues. Finally, balancing individual learner needs with curriculum demands (M=3.46) ranked lowest, though still rated as a frequent challenge.

The findings suggest that struggling learners not only demand significant instructional adaptation but also exert emotional and logistical pressure on teachers. The frequent encounters with such learners, coupled with challenges in differentiation, behavior management, and emotional fatigue, can impede the effective delivery of the Matatag Curriculum. This underscores the need for increased institutional support, including training on inclusive education, provision of classroom aides, access to mental health resources, and structured intervention programs. Equipping teachers with the skills and tools to address the needs of struggling learners will not only enhance instructional effectiveness but also foster a more equitable and supportive learning environment for all students. They may experience difficulties adapting to the revised curriculum structure and expectations, particularly if they have grown accustomed to traditional rote learning methods (Miao et al., 2022). Therefore, it is very important to assess the teaching strategies that will help them cope; instructional materials that will motivate them to have an active learning process for better learning outcomes.

Table 9

Teachers’ Self-Assessment on the Challenges Experienced in the Utilization of Teaching strategies in terms of Struggling Learners

Statement	Mean	Verbal Interpretation	Rank
1. I encounter pupils who are struggling in mathematics.	4.03	Often	1
2. I found it challenging to tailor instruction for students who are struggling.	3.84	Often	2
3. I observe that struggling learners are the cause of absenteeism.	3.76	Often	3
4. I feel that the workload increases significantly when addressing the needs of struggling learners.	3.73	Often	4
5. I find it challenging to manage the behavior of struggling learners compared to other pupils.	3.64	Often	5
6. I believe struggling learners slow down the pace of classes.	3.63	Often	6
7. I feel emotionally drained after working with a struggling learner.	3.54	Often	7.5
8. I find it difficult to motivate a struggling student despite my efforts.	3.54	Often	7.5
9. I find it challenging to maintain a positive attitude when working with struggling learners.	3.51	Often	9
10. I have trouble maintaining classroom management due to behavioral issues, specifically from struggling learners.	3.47	Often	10
11. I find it hard to balance the needs of struggling learners with the curriculum requirements.	3.46	Often	11
Average	**3.65**	**Often**	
Legend: *4.21 – 5.00 = Always*	*3.41 – 4.20 = Often*	*2.61 – 3.40 = Sometimes*	

1.81 – 2.60 = Rarely *1.00 – 1.80 = Never*

Effective classroom management is vital for creating an environment conducive to learning and for implementing diverse teaching strategies outlined in the Matatag Curriculum. Challenges in managing classroom behavior can hinder teachers' ability to deliver lessons effectively and impact student engagement. Table 10 examines teachers' self-assessment of the classroom management challenges they face, providing insight into how these issues affect their instructional practices and overall teaching experience.

The overall average mean score of 3.31, interpreted as "Sometimes," indicates that teachers experience classroom management challenges with moderate frequency. The most significant concern was the belief that classroom management issues hinder effective lesson delivery (M=3.73), followed closely by difficulties in managing pupil behavior (M=3.54). Teachers also reported implementing disciplinary actions for inappropriate behavior (M=3.50) and felt it necessary to enforce consequences for such behavior (M=3.43). Other issues included feelings of being overwhelmed by classroom management challenges (M=3.37) and spending excessive time on discipline rather than instruction (M=3.31). Although the mean scores for disruptions during lessons (M=3.30) and issues with parents or guardians (M=3.11) were lower, they still reflected notable concerns. The least frequently reported challenges involved losing control due to disruptive behavior (M=3.03) and experiencing a lack of respect from pupils (M=2.94), both rated as "Sometimes."

The findings reveal that while teachers occasionally encounter classroom management issues, these challenges significantly impact their instructional efficacy and enthusiasm for teaching. The prevalence of behavior management concerns suggests that educators may benefit from targeted professional development focusing on classroom management techniques, conflict resolution, and proactive behavioral strategies. Hepburn et al. (2020) found that classroom management and mathematics interest are determinants of mathematics achievement. Additionally, fostering partnerships with parents and guardians could enhance support for managing student behavior. Addressing these classroom management challenges is crucial for enabling teachers to create a more positive learning environment, ultimately facilitating the successful implementation of the Matatag Curriculum, and enhancing student outcomes.

Table 10

Teachers' Self-Assessment on the Challenges Experienced in the Utilization of Teaching strategies in terms of Classroom Management Issues

Statement	Mean	Verbal Interpretation	Rank
1. I feel that classroom management issues prevent delivering effective lessons.	3.73	Often	1
2. I find it challenging to manage the behavior of my pupils.	3.54	Often	2
3. I had to implement disciplinary actions for inappropriate behavior.	3.50	Often	3
4. I find it necessary to enforce consequences for inappropriate behavior.	3.43	Often	4
5. I feel overwhelmed by classroom management issues.	3.37	Sometimes	5
6. I feel that I spend more time on discipline than on instruction.	3.31	Sometimes	6
7. I experience disruptions during the delivery of the lessons.	3.30	Sometimes	7
8. I encounter problems with parents or guardians due to behavioral issues of their children.	3.11	Sometimes	8.5
9. I feel classroom management issues affect my enthusiasm for teaching.	3.11	Sometimes	8.5
10. I find myself losing control due to disruptive behavior.	3.03	Sometimes	10
11. I experienced a lack of respect from pupils that impacts my authority to teach them.	2.94	Sometimes	11
Average	**3.31**	**Sometimes**	

Legend: *4.21 – 5.00 = Always* *3.41 – 4.20 = Often* *2.61 – 3.40 = Sometimes*
1.81 – 2.60 = Rarely *1.00 – 1.80 = Never*

The successful implementation of teaching strategies as outlined in the Matatag Curriculum can be significantly influenced by various challenges faced by teachers. Understanding these challenges is essential for developing support mechanisms that enhance instructional quality and student outcomes. This table provides a summary of teachers' overall self-assessment of the challenges they encounter, categorized into dimensions of Lack of Resources, Insufficient Training, Struggling Learners, and Classroom Management Issues.

The general average mean score of 3.42, interpreted as "Often," indicates that teachers frequently experience challenges in their instructional practices. Among the dimensions, Lack of Resources ranked first with a mean score of 3.66, suggesting that resource constraints are a significant barrier to effective teaching. Struggling Learners followed closely with a mean of 3.65, highlighting the impact of students who face difficulties on teaching dynamics. Classroom Management Issues received a mean score of 3.31, indicating that while these challenges are present, they are experienced with less frequency than the first two categories. Lastly, Insufficient Training ranked fourth with a mean score of 3.08, suggesting that although it is a challenge, it is less frequently encountered compared to the other issues.

The findings underscore the complexity of challenges that teachers face in utilizing effective teaching strategies within the Matatag Curriculum framework. The predominance of resource-related challenges suggests a pressing need for schools and educational authorities to allocate adequate resources, such as teaching materials and technological tools, to support teachers. Additionally, the high frequency of struggles with learners indicates the need for targeted interventions and professional development focused on differentiated instruction and inclusive practices. While insufficient training is acknowledged as a challenge, its lower ranking may reflect ongoing professional development efforts. Addressing these interconnected challenges holistically will be essential for fostering an environment where teachers can effectively implement the curriculum and enhance student learning experiences. When we consider the problems related to education, the difficulties experienced in primary school mathematics teaching remain up to date. Considering that the foundations of mathematics were laid in primary school, it is a crucial requirement to regularly state the problems experienced by classroom teachers (Karah, 2022). The successful implementation of the Matatag Curriculum is not without its challenges. Initial pilot runs have revealed various obstacles, including the need for appropriate implementation approaches, inadequate government policies for inclusive education, and technical problems in implementation (Javier, 2023). Moreover, issues such as teacher readiness, lack of access to information resources, and infrastructural limitations pose significant challenges to the effective rollout of the curriculum (Macasero, 2023).

Table 11

Teachers' Overall Self-Assessment on the Challenges Experienced in the Utilization of Teaching Strategies

Dimension	Mean	Verbal Interpretation	Rank
Lack of Resources	3.66	Often	1
Insufficient Training	3.08	Sometimes	4
Struggling Learners	3.65	Often	2
Classroom Management Issues	3.31	Sometimes	3
General Average	**3.42**	**Often**	

Legend: *4.21 – 5.00 = Always* *3.41 – 4.20 = Often* *2.61 – 3.40 = Sometimes* *1.81 – 2.60 = Rarely* *1.00 – 1.80 = Never*

The ability to recognize numbers, colors, and shapes is fundamental to early childhood education and is crucial for laying the groundwork for future learning in mathematics and visual literacy. Teachers' perceptions of their pupils' performance in these areas provide valuable insights into the effectiveness of instructional strategies and interventions used in the classroom. Woods et al. (2018), the research shows that using a concrete representation of numbers with explicit instruction will benefit students in building their number sense. Incorporating concrete representations with explicit instruction significantly increases number sense, reinforcing the need for effective, hands-on learning teaching strategies in early childhood education. This table summarizes teachers' viewpoints on their pupils' abilities regarding number, color, and shape recognition, highlighting areas of strength and potential improvement.

The overall average mean score of 4.17 indicates that pupils are performing at a "Good" level in terms of number, color, and shape recognition. The highest-rated statement was that pupils can accurately count objects using concrete materials (M=4.40), reflecting strong foundational number skills. Following

closely, pupils were rated highly for successfully identifying colors during activities (M=4.39) and performing hands-on activities to enhance color and shape recognition (M=4.36), both of which emphasize the importance of interactive and tactile learning experiences. The ability to identify and name shapes in various contexts (M=4.20) and apply number recognition skills in everyday scenarios (M=4.19) were also rated as "Good" performances. Additionally, pupils demonstrated competence in applying number recognition in real-life situations (M=4.04), participating in group activities (M=4.03), and showing proficiency in number recognition (M=4.00). The lowest rating, yet still within the "Good" category, was that pupils learn effectively through interventions and feedback (M=3.97).

The findings indicate that pupils generally exhibit strong skills in number, color, and shape recognition, suggesting that current teaching strategies and interventions are effective in promoting foundational skills. The high ratings for hands-on and interactive learning activities underscore the importance of engaging instructional methods that cater to diverse learning styles. However, the slightly lower rating regarding learning through interventions and feedback suggests that there may be opportunities to enhance the effectiveness of feedback mechanisms and targeted support strategies. Teachers might benefit from further professional development focused on formative assessment techniques and strategies for providing timely and constructive feedback. By refining these aspects, educators can better support pupil learning and foster a more conducive environment for skill development in early childhood education.

Table 12
Teachers' Viewpoint on the Performances of their Pupils in terms of Number, Color, and Shape Recognition

Statement	Mean	Verbal Interpretation	Rank
1. Pupils can count the objects accurately using concrete materials.	4.40	Excellent	1
2. Pupils are successfully identifying colors during activities.	4.39	Excellent	2
3. Pupils can perform hands-on activities to enhance color and shape recognition	4.36	Excellent	3
4. Pupils can identify and name shapes in various contexts.	4.20	Good	4
5. Pupils can apply their number recognition skills in everyday scenarios.	4.19	Good	5
6. Pupils can apply their number recognition skills in real-life situations.	4.04	Good	6
7. Pupils are performing well in group activities.	4.03	Good	7
8. Pupils can demonstrate proficiency in number recognition.	4.00	Good	8
9. Pupils learn through interventions and feedback	3.97	Good	9
Average	**4.17**	**Good**	

Legend: *4.21 – 5.00 = Excellent* *3.41 – 4.20 = Good* *2.61 – 3.40 = Average* *1.81 – 2.60 = Below Average* *1.00 – 1.80 = Poor*

Understanding quantity is a fundamental component of early mathematics education, influencing pupils' ability to engage with more complex mathematical concepts later. Bryant et al. (2008) says that students who struggle with computation fluency are due to a lack of basic number understanding. The effectiveness of teaching methods in fostering this understanding is critical for developing students' mathematical fluency and application skills. This table presents teachers' viewpoints on their pupils' performances regarding quantitative understanding, highlighting instructional strategies that may contribute to enhancing pupils' comprehension in this area.

The overall average mean score of 4.00, interpreted as "Good," indicates that pupils demonstrate a solid understanding of quantity concepts. The highest-rated statement was that pupils show improvement in their understanding of quantity when taught through games or interactive activities (M=4.16), emphasizing the effectiveness of engaging, playful learning experiences. Hands-on activities also received a high rating (M=4.09), reinforcing the value of tactile learning in enhancing conceptual understanding. Pupils were further noted to effectively use manipulatives to represent and understand quantities (M=4.07) and to demonstrate understanding through real-world applications (M=4.06). Additionally, the ability to relate quantity concepts to everyday experiences was similarly rated (M=4.06), indicating that contextual learning plays a significant role. Other positive ratings included improvements through consistent practice (M=4.03) and a clear understanding of quantity concepts (M=4.00). However, the ability to articulate understanding clearly (M=3.90) and solve problems involving comparing and ordering quantities (M=3.79) received the lowest ratings within the "Good" category, indicating areas for potential growth. Reyes et al. (2019) found out in their study that teachers can help their students develop concepts using visual aids

such as local games, materials that are easily accessible in the community, or photos of scenes or environments that illustrate math topics. An alternative teaching tool could be made using homemade educational materials. It has a significant role in enhancing the learning experience for young learners by providing a concrete representation that clarifies information. It will boost the interest of the pupils through hands-on activities and encourage creativity for better learning outcomes.

The findings suggest that pupils generally possess a good understanding of quantity, supported by effective teaching strategies that incorporate interactive and hands-on learning experiences. The positive influence of game-based learning and real-world applications highlights the importance of context in mathematics education. However, the lower ratings for articulating understanding and problem-solving with quantities suggest that there may be opportunities to enhance communication skills and mathematical reasoning in students. Teachers could benefit from strategies that focus on encouraging pupils to verbalize their thought processes and apply their understanding in varied contexts. This approach not only reinforces learning but also builds confidence in their mathematical abilities. Continuous professional development that emphasizes these aspects could further strengthen instructional practices and improve student outcomes in understanding quantity concepts.

Table 13

Teachers' Viewpoint on the Performances of their Pupils in terms of Understanding of Quantity

Statement	Mean	Verbal Interpretation	Rank
1. Pupils show improvement in their quantitative understanding when taught through games or interactive activities.	4.16	Good	1
2. Pupils enhance their understanding of quantity through hands-on activities.	4.09	Good	2
3. Pupils can effectively use manipulatives to represent and understand quantities.	4.07	Good	3
4. Pupils demonstrate understanding of quantity through real-world applications.	4.06	Good	4.5
5. Pupils can relate quantity concepts to their everyday experiences.	4.06	Good	4.5
6. Pupils improve their understanding of quantity with consistent practice.	4.03	Good	6
7. Pupils demonstrate a clear understanding of quantity concepts.	4.00	Good	7
8. Pupils can accurately compare quantities in different contexts (more or less).	3.99	Good	8
9. Pupils frequently understand the concept of quantity.	3.91	Good	9
10. Pupils can articulate their understanding of quantity clearly.	3.90	Good	10
11. Pupils can successfully solve problems that involve comparing and ordering quantities.	3.79	Good	11
Average	**4.00**	**Good**	

Legend: *4.21 – 5.00 = Excellent* *3.41 – 4.20 = Good* *2.61 – 3.40 = Average* *1.81 – 2.60 = Below Average* *1.00 – 1.80 = Poor*

Understanding patterns and sorting is a critical component of early mathematical learning, laying the foundation for more complex mathematical concepts and skills. Engaging students in activities that involve recognizing, creating, and sorting patterns enhances their cognitive abilities and promotes analytical thinking. This table presents teachers' perspectives on their pupils' performances related to patterns and sorting, providing insights into effective teaching practices and areas for further development. Woods et al. (2018) share that a number line can be used as an instructional strategy to construct number sense. When instructed how to use number lines, they can teach students a variety of skills such as counting, ordering numbers before and after, patterns, and learning how far apart numbers are from one another. This emphasizes, tools like number lines can serve as powerful instructional aids, not only for building number sense but for teaching key skills such as counting, sequencing, pattern recognition, and understanding numerical relationships. Integrating such strategies into early math instruction supports a more comprehensive and effective approach to developing mathematical fundamentals among young learners within the Matatag Curriculum.

The overall average mean score of 4.06, interpreted as "Good," indicates that pupils generally perform well in understanding patterns and sorting concepts. The highest-rated statement was that pupils can sort objects based on multiple attributes, such as color, size, and shape (M=4.37), reflecting strong foundational sorting skills. Additionally, pupils were noted to effectively use manipulatives to explore

patterns and sorting concepts (M=4.10), and they showed enthusiasm for these activities (M=4.10), indicating high levels of engagement. Other positive ratings included pupils' ability to recognize and create simple patterns (M=4.07), identify and continue patterns (M=4.07), and enjoy group learning for exploring sorting tasks (M=4.07). Hands-on activities were also seen to improve pupils' sorting skills (M=4.06). The ability to explain the reasoning behind sorting choices (M=3.96) and demonstrate the creation of their patterns using different materials (M=3.96) were both rated positively, as well as sorting based on complex attributes like texture (M=3.94). However, the lowest rating pertained to applying pattern understanding to solve problems across different concepts (M=3.91), although this still falls within the "Good" category. Haury and Rillero (2015) posit that a hands-on learning approach involves the child in a total learning experience, which enhances the child's ability to think critically.

The findings suggest that pupils exhibit a good understanding of patterns and sorting, supported by effective instructional strategies that incorporate hands-on and interactive learning experiences. The high level of engagement in pattern and sorting activities highlights the importance of using manipulatives and group work to foster a collaborative learning environment. However, the slightly lower rating for the application of pattern understanding to solve problems indicates a potential area for growth. Teachers may consider integrating more problem-solving activities that require pupils to apply their pattern recognition skills in diverse contexts, thereby enhancing their analytical thinking and real-world application abilities. Continuous professional development focused on creative problem-solving techniques and the use of varied instructional materials could further support teachers in enhancing pupils' learning experiences in patterns and sorting. This indicates that while current teaching methods effectively support pupils' foundational skills of pattern and sorting, there is a need to strengthen their ability to apply these skills in problem-solving contexts. This implies that instructional approaches should go beyond recognizing and organizing activities to be more interactive, incorporating diverse learning experiences, and promoting higher order thinking skills, aligning closely with the Matatag Curriculum's goal, fostering critical and practical mathematical competencies for early learners, and providing meaningful experiences and academic success.

Table 14
Teachers' Viewpoint on the Performances of their Pupils in terms of Patterns and Sorting

Statement	Mean	Verbal Interpretation	Rank
1. Pupils can sort objects based on multiple attributes (color, size, shape).	4.37	Excellent	1
2. Pupils can effectively use manipulatives to explore patterns and sorting concepts.	4.10	Good	2.5
3. Pupils show enthusiasm in pattern and sorting activities.	4.10	Good	2.5
4. Pupils can recognize and create simple patterns.	4.07	Good	5
5. Pupils can identify, continue, and answer the patterns.	4.07	Good	5
6. Pupils enjoy learning in groups to explore patterns and sorting tasks.	4.07	Good	5
7. Pupils improve their performance in sorting skills with hands-on activities.	4.06	Good	7
8. Pupils can explain the reasoning behind their sorting choices.	3.96	Good	8.5
9. Pupils demonstrate the ability to create their patterns using different materials.	3.96	Good	8.5
10. Pupils can sort objects into categories based on complex attributes (texture)	3.94	Good	10
11. Pupils can apply their understanding of patterns to solve problems in different concepts.	3.91	Good	11
Average	**4.06**	**Good**	

Legend: *4.21 – 5.00 = Excellent* *3.41 – 4.20 = Good* *2.61 – 3.40 = Average* *1.81 – 2.60 = Below Average* *1.00 – 1.80 = Poor*

Measurement concepts are essential in early mathematics education, as they provide students with the foundational skills necessary for understanding quantity, dimension, and comparison. Engaging students in hands-on measurement activities can enhance their comprehension and application of these concepts in real-life situations. Learning measurement requires students to manipulate, explore, and question how measuring tools are used and what happens when an object's dimensions change. With the knowledge that measurement requires manipulating, studying, and asking, teachers need to provide students opportunities to do this (Hoke, 2008). This table presents teachers' perspectives on their pupils'

performances related to measurement concepts, highlighting strengths and areas for further development in their mathematical education.

The overall average mean score of 3.80, interpreted as “Good,” indicates that pupils generally exhibit a solid understanding of measurement concepts. The highest-rated statement was that pupils improve their measurement skills through hands-on activities (M=3.97), underscoring the effectiveness of experiential learning in this area. Additionally, pupils demonstrated a clear understanding of basic measurement concepts (M=3.91) and could compare, and order objects based on their measurements (M=3.83), both of which reflect strong foundational skills. Pupils were also noted to apply measurement concepts in real-life situations (M=3.80), enhance their overall mathematical understanding through practice with measurement concepts (M=3.80), and explain their reasoning when measuring and comparing objects (M=3.80). Enthusiasm for measurement activities was also highlighted (M=3.79), along with the ability to use measuring tools accurately (M=3.77) and collaborate with peers during measurement tasks (M=3.77). Other positive ratings included the ability to articulate the importance of measurement in everyday life (M=3.76), estimating with reasonable accuracy (M=3.73), and understanding the concept of units in measurement (M=3.64), all rated within the “Good” category.

The findings suggest that pupils demonstrate a good understanding of measurement concepts, bolstered by effective teaching strategies that emphasize hands-on learning and real-world applications. The high engagement levels indicate that students find measurement activities enjoyable and meaningful. However, the slightly lower rating for understanding units in measurement (M=3.64) suggests a potential area for improvement. Teachers might focus on reinforcing the concept of measurement units through targeted activities and discussions, ensuring that pupils not only practice measurement skills but also understand the theoretical aspects. Continuous professional development in innovative measurement strategies and resources can further enhance teachers' abilities to foster a deeper understanding of measurement concepts in their pupils, ultimately contributing to improved mathematical literacy. Training is a procedure to acquire the abilities needed for a specific subject. The training helps the teachers to improve their instructional techniques. A teacher who has received training can use more methods and abilities to help students achieve greater success (Ulla, 2018). The most fundamental aspect of human resources management is training. It involves the methodical use of formal procedures to assist individuals in acquiring the knowledge and abilities required for them to execute their jobs successfully (Armstrong, 2020). The primary tactic for achieving institutional goals is training. It enhances teachers' performance (Khan, 2011; Ruttledge & Cathcart, 2019). Systematic professional development enhances instructional effectiveness and equips teachers with a wider range of strategies. Therefore, continuous training focused on innovation can significantly contribute to achieving Matatag Curriculum goals, leading to improved student fundamental skills in mathematics.

Table 15
Teachers’ Viewpoint on the Performances of their Pupils in terms of Measurement Concepts

Statement	Mean	Verbal Interpretation	Rank
1. Pupils improve measurement skills through hands-on activities.	3.97	Good	1
2. Pupils demonstrate a clear understanding of basic measurement concepts.	3.91	Good	2
3. Pupils can compare and order objects based on their measurements.	3.83	Good	3
4. Pupils can apply measurement concepts in real-life situations.	3.80	Good	5
5. Pupils enhance overall mathematical understanding through practice with measurement concepts.	3.80	Good	5
6. Pupils can explain their reasoning when measuring and comparing objects.	3.80	Good	5
7. Pupils demonstrate enthusiasm when engaging in measurement activities.	3.79	Good	7
8. Pupils can use measuring tools accurately.	3.77	Good	8.5
9. Pupils collaborate with peers during measurement tasks to enhance their understanding	3.77	Good	8.5
10. Pupils can articulate the importance of measurement in everyday life.	3.76	Good	10
11. Pupils can estimate with reasonable accuracy.	3.73	Good	11
12. Pupils can understand the concept of units in measurement.	3.64	Good	12
Average	**3.80**	**Good**	

Legend: 4.21 – 5.00 = Excellent 3.41 – 4.20 = Good 2.61 – 3.40 = Average

1.81 – 2.60 = Below Average 1.00 – 1.80 = Poor

Mastery of basic operations—addition, subtraction, multiplication, and division—is fundamental to a solid mathematical foundation in early education. These skills not only contribute to pupils' mathematical proficiency but also enable them to apply mathematical concepts in real-life scenarios. This table summarizes teachers' viewpoints on their pupils' performances regarding basic operations, shedding light on their strengths and areas where further support may be needed.

The overall average mean score of 3.62, interpreted as "Good," indicates that pupils demonstrate a solid understanding of basic operations. The highest-rated statement was that pupils demonstrate understanding in basic operation concepts (M=3.83), suggesting a strong foundational knowledge. Following closely, pupils were noted to improve their performance through consistent practice of basic operations (M=3.81) and understand these operations through hands-on activities (M=3.79). The ability to accurately perform addition and subtraction problems with minimal errors was rated at (M=3.74), along with performing basic addition and subtraction facts in various activities (M=3.74). Pupils were also able to apply basic operations in real-life situations (M=3.64) and demonstrate proficiency in mathematics (M=3.63). However, the ability to explain reasoning when solving basic operation problems (M=3.57) received a lower rating, along with understanding division concepts (M=3.27) and solving simple multiplication problems (M=3.24), both of which were categorized as "Average."

The findings suggest that pupils generally possess a good understanding of basic operations, supported by effective teaching strategies that emphasize practice and hands-on learning. However, the average ratings for division and multiplication indicate areas that may require further instructional focus. Teachers might consider integrating more targeted activities that promote mastery of these operations, particularly in real-life applications. Additionally, enhancing opportunities for pupils to articulate their reasoning during problem-solving can deepen their understanding and reinforce their learning. Continuous professional development in instructional strategies for teaching multiplication and division may further equip teachers to support their pupils' growth in these critical areas, ultimately fostering a more comprehensive mathematical education. Students must master these four operations from the elementary school level. One operation that quite often causes problems for students is the multiplication operation (Kosko, 2019). Some students may face difficulties in applying the concept of multiplication in solving mathematical problems. This involves the ability to identify relevant information, formulate equations, and calculate multiplication results (Ilukena et al., 2020).

Table 16

Teachers' Viewpoint on the Performances of their Pupils in terms of Basic Operations

Statement	Mean	Verbal Interpretation	Rank
1. Pupils demonstrate understanding of basic operation concepts.	3.83	Good	1
2. Pupils improve performance through consistent practice of basic operations.	3.81	Good	2
3. Pupils understand the basic operation through hands-on activities.	3.79	Good	3
4. Pupils can accurately perform addition and subtraction problems with minimal errors.	3.74	Good	4.5
5. Pupils can perform basic addition and subtraction facts in several activities.	3.74	Good	4.5
6. Pupils can apply basic operations in real-life situations.	3.64	Good	6
7. Pupils can perform basic operations in mathematics.	3.63	Good	7
8. Pupils can demonstrate mastery of basic operations by completing their assignments independently.	3.59	Good	8
9. Pupils can explain their reasoning when solving basic operation problems.	3.57	Good	9
10. Pupils demonstrate understanding of division concepts.	3.27	Average	10
11. Pupils can solve simple multiplication problems.	3.24	Average	11
Average	**3.62**	**Good**	

Legend: 4.21 – 5.00 = Excellent 3.41 – 4.20 = Good 2.61 – 3.40 = Average
1.81 – 2.60 = Below Average 1.00 – 1.80 = Poor

The overall performance of pupils across various dimensions of early mathematics education provides a comprehensive understanding of their learning outcomes and areas of strength. Evaluating pupils' competencies in critical areas such as number, color, and shape recognition; understanding of

quantity; patterns and sorting; measurement concepts; and basic operations is essential for informing instructional practices and curriculum development. This table presents teachers' viewpoints on their pupils' overall performances across these key dimensions, offering insights into their educational effectiveness.

The general average mean score of 3.93, interpreted as "Good," indicates that pupils are performing well across the assessed dimensions. The highest-rated area was Number, Color, and Shape Recognition (M=4.17), demonstrating strong foundational skills in these essential early learning concepts. This was followed by Patterns and Sorting (M=4.06), indicating effective engagement and comprehension in recognizing and manipulating patterns. The Understanding of Quantity dimension received a mean score of 4.00, reflecting a solid grasp of quantity concepts among pupils. Measurement Concepts were rated at 3.80, indicating good performance, while Basic Operations scored the lowest at 3.62, although still within the "Good" range. These ranking highlights that while pupils exhibit general competency in mathematics, there are areas that may require additional focus and support.

The findings suggest that pupils are generally performing well in early mathematics education, with strengths in foundational areas such as number recognition, patterns, and sorting. However, the lower performance in Basic Operations indicates a need for targeted instructional strategies to enhance pupils' skills in this critical area. Teachers might consider incorporating more interactive and hands-on learning opportunities to reinforce basic operation concepts and ensure that students can apply these skills in real-life contexts. Additionally, professional development focusing on innovative teaching methods and assessment practices may further support teachers in addressing these challenges. By continuing to refine instructional approaches based on these insights, educators can enhance the overall mathematical competence of their pupils and foster a more robust learning environment.

In mathematics, there are four basic operations that students must master at the elementary school level, namely, addition, subtraction, multiplication, and division (Rejeki et al., 2024). Responding to problems found in the field, researchers assume that to improve the multiplication learning outcome, second-grade students to use hands-on activity media that can be operated directly by students. Hands-on activity media, or direct practice activities, is a learning approach that actively involves students in physical or interactive activities to understand certain concepts (Kanastren et al., 2023). In addition, involving students directly in learning can make learning more interesting and relevant for them (Perbowo et al., 2019). To optimize the use of media, researchers used mathematical worksheets to ensure that the mathematics activities carried out by the students in class were direct and coherent. Mathematics worksheets are a learning tool commonly used in elementary schools to help students practice and master mathematical concepts (Supriyanto et al., 2020).

Table 17
Teachers' Viewpoint on the Overall Performances of their Pupils

Dimension	Mean	Verbal Interpretation	Rank
Number, Color, and Shape Recognition	4.17	Good	1
Understanding of Quantity	4.00	Good	3
Patterns and Sorting	4.06	Good	2
Measurement Concepts	3.80	Good	4
Basic Operation	3.62	Good	5
General Average	**3.93**	**Good**	

Legend: *4.21 – 5.00 = Excellent* *3.41 – 4.20 = Good* *2.61 – 3.40 = Average* *1.81 – 2.60 = Below Average* *1.00 – 1.80 = Poor*

Understanding the differences in the utilization of teaching strategies based on teachers' age is crucial for tailoring professional development and support to meet diverse instructional needs. The Matatag Curriculum emphasizes various pedagogical approaches, including differentiated instruction, technology integration, experiential learning, and collaborative learning. This table presents the results of a Kruskal-Wallis H test examining whether there are significant differences in the levels of utilization of these teaching strategies among teachers grouped by age.

The analysis indicates varying results based on the teaching strategies examined. For Differentiated Instruction, the mean scores across age groups were as follows: below 30 years old (M=4.62), 30–50 years old (M=4.54), and 51 years old and above (M=4.43), with a Kruskal-Wallis H value of 1.99 and a p-value of 0.371, leading to the conclusion of no significant difference. In the case of Technology Integration, younger

teachers (below 30 years old) scored higher (M=4.57) compared to older groups (30–50 years old: M=4.31; 51 years old and above: M=3.98), yielding a significant difference (H=8.30, p=0.016), indicating that age influences the level of technology integration utilized in teaching. For Experiential Learning, no difference was noted between the two younger groups (both M=4.50), while the oldest group had a lower mean (M=4.03). This resulted in a significant difference (H=9.36, p=0.009), suggesting that younger teachers may be more inclined to implement experiential learning strategies. Lastly, for Collaborative Learning, the mean scores indicated no significant differences among age groups (below 30 years: M=4.62; 30–50 years: M=4.39; 51 years and above: M=4.26; H=4.62, p=0.099).

The findings highlight that age influences the utilization of specific teaching strategies among teachers, particularly in technology integration and experiential learning. Younger teachers appear to embrace technology more readily and may engage in more experiential learning practices, while older teachers show consistent utilization across various strategies without significant differences. These insights suggest a need for targeted professional development that accommodates these generational differences in teaching practice. For instance, workshops focusing on technology integration could be beneficial for older teachers, while younger educators could be encouraged to share their innovative practices with their peers. By fostering an environment that promotes collaboration and shared learning across age groups, educational institutions can enhance the overall effectiveness of the Matatag Curriculum and ensure that all teachers are well-equipped to meet the diverse needs of their students.

Integrating technology into education provides students with an engaging learning experience, allowing them to remain more interested in the subject without being distracted. The utilization of projectors, computers, and other cutting-edge technical gear in the classroom may make studying fascinating and entertaining for students. Student learning can become more dynamic ang engaging by establishing tasks in class that incorporate technology resources, oral presentations, and group participation. Participation can extend beyond verbal communication as well (Haleem et al., 2022).

Table 18

Significant Difference on Teachers' Level of Utilization of the Teaching Strategy based on the Matatag Curriculum when Grouped According to their Age

Variable	Group	Mean	Kruskal-Wallis H	p-value	Decision	Conclusion
Differentiated Instruction	Below 30 years old	4.62	1.99	0.371	Fail to Reject Ho	No Significant Difference Exists
	30 – 50 years old	4.54				
	51 years old and above	4.43				
Technology Integration	Below 30 years old	4.57	8.30*	0.016	Reject Ho	Significant Difference Exists
	30 – 50 years old	4.31				
	51 years old and above	3.98				
Experiential Learning	Below 30 years old	4.50	9.36*	0.009	Reject Ho	Significant Difference Exists
	30 – 50 years old	4.50				
	51 years old and above	4.03				
Collaborative Learning	Below 30 years old	4.62	4.62	0.099	Fail to Reject Ho	No Significant Difference Exists
	30 – 50 years old	4.39				
	51 years old and above	4.26				

**Significant at* $\alpha = 0.05$

The educational attainment of teachers is an important factor that may influence their teaching practices and the level of utilization of various pedagogical strategies outlined in the Matatag Curriculum. Understanding whether there are significant differences in teaching strategy utilization based on teachers' highest educational qualifications can help inform professional development initiatives and instructional support. This table presents the results of a Mann-Whitney U test examining the differences in the level of utilization of differentiated instruction, technology integration, experiential learning, and collaborative learning among teachers with Bachelor's and Master's degrees.

The analysis reveals that there are no significant differences in the level of utilization of teaching strategies between teachers with Bachelor's and Master's degrees across all examined variables. For Differentiated Instruction, the mean for teachers with a Bachelor's degree was 4.51, while for those with a Master's degree it was 4.60, yielding a Mann-Whitney U value of 504.00 and a p-value of 0.405. For

Technology Integration, the mean scores were 4.30 (Bachelor's) and 4.42 (Master's), resulting in a U value of 505.50 and a p-value of 0.416. Similarly, for Experiential Learning, Bachelor's degree holders scored 4.36 while Master's degree holders scored 4.52, with a U value of 485.50 and a p-value of 0.288. Lastly, for Collaborative Learning, the means were 4.43 (Bachelor's) and 4.48 (Master's), resulting in a U value of 511.50 and a p-value of 0.456. In all cases, the p-values exceeded the significance level of 0.05, leading to the conclusion that there are no significantly different levels of strategy utilization based on educational attainment.

The findings suggest that teachers' highest educational attainment does not significantly impact their level of utilization of the teaching strategies associated with the Matatag Curriculum. This indicates that both Bachelor's and Master's degree holders may share similar practices in implementing differentiated instruction, technology integration, experiential learning, and collaborative learning. Given that educational attainment does not appear to influence strategy utilization, professional development initiatives may benefit from focusing on enhancing specific teaching practices rather than tailoring programs based solely on the level of educational qualifications. By fostering an inclusive and collaborative professional learning environment, all teachers can be supported in their continuous growth and effectiveness in the classroom.

In-service teacher training can be an effective way of imparting knowledge, skills, and motivation to teachers. It is a way to provide continuous education to the teachers who have already taken any certification in teaching and have chosen teaching as a profession. In-service teacher training can be defined as a series of activities arranged to engage teachers to enhance their knowledge, raise their skills, and broaden their professional approaches (Koellner & Greenblatt, 2018). According to Boudersa (2016), teacher training is very important to meet the advancements in education, not only in teaching but in assessment as well. In line with such requirements of training programs for teacher education, the Punjab government and private school chains have set up different training programs. In addition, teacher training plays a vital role in students' learning achievement; moreover, the context also plays an important role in teachers' professional development (Ikeda et al., 2019).

Table 19

Significant Difference on Teachers' Level of Utilization of the Teaching Strategy based on the Matatag Curriculum when grouped according to their Highest Educational Attainment

Variable	Group		Mann-Whitney U	p-value	Decision	Conclusion
Differentiated Instruction	Bachelor's Degree	4.51	504.00	0.405	Fail to Reject Ho	Not Significantly Different
	Master's Degree	4.60				
Technology Integration	Bachelor's Degree	4.30	505.50	0.416	Fail to Reject Ho	Not Significantly Different
	Master's Degree	4.42				
Experiential Learning	Bachelor's Degree	4.36	485.50	0.288	Fail to Reject Ho	Not Significantly Different
	Master's Degree	4.52				
Collaborative Learning	Bachelor's Degree	4.43	511.50	0.456	Fail to Reject Ho	Not Significantly Different
	Master's Degree	4.48				

**Significant at* $\alpha = 0.05$

The length of service of teachers is often believed to influence their pedagogical practices and the effectiveness of teaching strategies employed in the classroom. Understanding whether there are significant differences in the level of utilization of various teaching strategies based on teachers' years of experience can provide insights into how professional development and support should be tailored. This table presents the results of a Kruskal-Wallis H test examining the differences in the level of utilization of differentiated instruction, technology integration, experiential learning, and collaborative learning among teachers with varying lengths of service.

The analysis indicates that there are no significant differences in the level of utilization of teaching strategies based on the length of service among teachers. For Differentiated Instruction, teachers with 0–3 years of experience reported a mean of 4.57, while those with 4–10 years and more than 10 years had means of 4.55 and 4.52, respectively. The Kruskal-Wallis H value was 0.50, with a p-value of 0.780, leading to the conclusion of no significant difference. Similarly, for Technology Integration, the mean scores were 4.53 (0–3 years), 4.34 (4–10 years), and 4.21 (more than 10 years), with an H value of 2.60 and a p-value of 0.272, failing to reject the null hypothesis. The same pattern was observed for Experiential Learning, with

means of 4.43 (0–3 years), 4.51 (4–10 years), and 4.34 (more than 10 years), yielding an H value of 1.89 and a p-value of 0.389, indicating no significant differences. Finally, for Collaborative Learning, the means were 4.54 (0–3 years), 4.46 (4–10 years), and 4.38 (more than 10 years), resulting in an H value of 1.12 and a p-value of 0.571, which also indicated no significant difference.

The findings suggest that the length of service does not significantly impact the level of utilization of teaching strategies among teachers in the context of the Matatag Curriculum. This indicates that both novice and more experienced teachers employ similar practices in differentiated instruction, technology integration, experiential learning, and collaborative learning. Given that length of service does not appear to influence strategy utilization, professional development initiatives may need to focus more on specific instructional strategies rather than being based solely on years of experience. Future research could explore other variables that might affect teaching practice, such as ongoing training opportunities, teacher collaboration, or the support provided by school administration. By fostering an environment that encourages professional growth for all teachers, irrespective of their length of service, educational institutions can enhance teaching quality and effectiveness in the classroom. Professional development consists of all natural learning experiences and those conscious and planned activities which are intended to be of direct or indirect benefit to the individual, group, or school, which contribute through these to the quality of education in the classroom. It is the process by which, alone and with others, teachers review, renew and extend their commitment as change agents to the moral purposes of teaching; and by which they acquire and develop critically the knowledge, skills and emotional intelligence essential to good professional thinking, planning, and practice with children, young people and colleagues throughout each phase of their teaching lives (Karlberg & Bezzina, 2020).

Table 20

Significant Difference on Teachers' Level of Utilization of the Teaching Strategy based on the Matatag Curriculum when grouped according to their Length of Service

Variable	Group		Kruskal-Wallis H	p-value	Decision	Conclusion
Differentiated Instruction	0-3 years	4.57	0.50	0.780	Fail to Reject Ho	No Significant Difference Exists
	4-10 years	4.55				
	more than 10 years	4.52				
Technology Integration	0-3 years	4.53	2.60	0.272	Fail to Reject Ho	No Significant Difference Exists
	4-10 years	4.34				
	more than 10 years	4.21				
Experiential Learning	0-3 years	4.43	1.89	0.389	Fail to Reject Ho	No Significant Difference Exists
	4-10 years	4.51				
	more than 10 years	4.34				
Collaborative Learning	0-3 years	4.54	1.12	0.571	Fail to Reject Ho	No Significant Difference Exists
	4-10 years	4.46				
	more than 10 years	4.38				

**Significant at* $\alpha = 0.05$

The size of a school may impact various aspects of the educational environment, including the resources available for teaching, the professional support teachers receive, and the overall school culture. Understanding whether there are significant differences in the utilization of teaching strategies among teachers in small, medium, and large schools is crucial for tailoring support and professional development initiatives. This table presents the results of a Kruskal-Wallis H test that examines differences in the levels of utilization of differentiated instruction, technology integration, experiential learning, and collaborative learning based on school size.

The analysis reveals that there are no significant differences in the level of utilization of teaching strategies based on school size. For Differentiated Instruction, teachers in small schools had a mean score of 4.63, while those in medium and large schools scored 4.49 and 4.58, respectively. The Kruskal-Wallis H value was 1.17, with a p-value of 0.556, leading to the conclusion of no significant difference. In terms of Technology Integration, small schoolteachers reported a mean of 4.50, compared to 4.31 for medium schools and 4.19 for large schools. The resulting H value was 3.51, with a p-value of 0.173, which also failed to reject the null hypothesis. For Experiential Learning, the mean scores were 4.58 (small), 4.36

(medium), and 4.32 (large), yielding an H value of 4.03 and a p-value of 0.134, indicating no significant differences. Lastly, for Collaborative Learning, the means were 4.56 (small), 4.40 (medium), and 4.43 (large), resulting in an H value of 1.36 and a p-value of 0.505, further confirming no significant difference.

The findings suggest that school size does not significantly influence the level of utilization of teaching strategies among teachers in the context of the Matatag Curriculum. This indicates that regardless of school size, teachers are similarly engaging with differentiated instruction, technology integration, experiential learning, and collaborative learning strategies. Given that school size does not appear to impact teaching strategy utilization, professional development initiatives should focus on enhancing specific teaching practices rather than being tailored based on school size. Further research could explore other factors, such as school leadership, teacher collaboration, or the availability of resources, that may more directly correlate with effective teaching practices. By fostering a supportive and resource-rich environment across all school sizes, educational institutions can enhance the overall effectiveness of teaching strategies and improve student learning outcomes.

Table 21

Significant Difference on Teachers' Level of Utilization of the Teaching Strategy based on the Matatag Curriculum when grouped according to their School Size

Variable	Group		Kruskal-Wallis H	p-value	Decision	Conclusion
Differentiated Instruction	Small	4.63	1.17	0.556	Fail to Reject Ho	No Significant Difference Exists
	Medium	4.49				
	Large	4.58				
Technology Integration	Small	4.50	3.51	0.173	Fail to Reject Ho	No Significant Difference Exists
	Medium	4.31				
	Large	4.19				
Experiential Learning	Small	4.58	4.03	0.134	Fail to Reject Ho	No Significant Difference Exists
	Medium	4.36				
	Large	4.32				
Collaborative Learning	Small	4.56	1.36	0.505	Fail to Reject Ho	No Significant Difference Exists
	Medium	4.40				
	Large	4.43				

**Significant at* $\alpha = 0.05$

The relationship between teachers' instructional practices and pupil performance is a crucial area of study in educational research. Specifically, differentiated instruction—a strategy aimed at meeting diverse student needs—has the potential to enhance learning outcomes across various subject areas. This table presents the correlation coefficients and p-values assessing the relationship between teachers' level of utilization of differentiated instruction and the performance of their pupils in key mathematical areas: number, color, and shape recognition; understanding of quantity; patterns and sorting; measurement concepts; and basic operations.

The analysis indicates that all correlation coefficients reflect a positive but weak relationship between the utilization of differentiated instruction and pupil performance across the various dimensions. For Number, Color, and Shape Recognition, the correlation coefficient is 0.177 (p=0.142), indicating not significantly correlated. In the area of Understanding of Quantity, the coefficient is 0.099 (p=0.414), which is also not significantly correlated. For Patterns and Sorting, the coefficient is 0.144 (p=0.234), demonstrating not significantly correlated results. The Measurement Concepts dimension shows a slightly higher correlation coefficient of 0.211 (p=0.079), nearing significance but still classified as not significantly correlated. Finally, for Basic Operations, the correlation coefficient is 0.197 (p=0.102), also indicating not significantly correlated.

The findings suggest that while there is a positive relationship between the level of utilization of differentiated instruction and pupil performance across various mathematical domains, the correlations are weak and not statistically significant. This indicates that factors other than differentiated instruction may play a more critical role in influencing pupil performance. It may be beneficial for educators to explore additional instructional strategies, classroom management techniques, and resource availability that could

enhance student learning outcomes. Furthermore, ongoing professional development focusing on effective differentiation techniques, as well as collaborative practices among teachers, could help strengthen the impact of instructional methods on student achievement. Future research could examine other variables, such as student engagement, teacher collaboration, and the socio-economic context of schools, to provide a more comprehensive understanding of the factors that contribute to pupil performance.

Teachers need to have a wealth of knowledge in various teaching strategies and a bucket of these strategies to choose from. This helps educators engage their learners and keep their classroom actively participating in the learning process. Strategies help learners participate, connect, and add excitement to the content being delivered (Bouslog, 2022). Additionally, students often show improvement in their performance through diversified instructions. Tailored approaches address individual learning styles, allowing students to engage in the teaching-learning process. Varied instructional methods keep students interested and motivated, making it easier to grasp and retain information. By tailoring lessons, it will help children to engage more deeply and meet individual needs, interests, and learning styles. It will boost their interest to participate actively and stay motivated. Differentiation allows children to work at their learning style, which leads to better understanding and improved performance.

Differentiated instruction is a strategy that can effectively meet the diverse needs of all students, leading to improved student achievement (Parsons et al., 2018).

Table 22

Significant Relationship of Teachers' Level of Utilization of Differentiated Instruction to the Performance of their Pupils

Variable	Correlation Coefficient	Degree of Relation	p-value	Conclusion
Number, Color, and Shape Recognition	0.177	Positive/Weak	0.142	Not Significantly Correlated
Understanding of Quantity	0.099	Positive/Weak	0.414	Not Significantly Correlated
Patterns and Sorting	0.144	Positive/Weak	0.234	Not Significantly Correlated
Measurement Concepts	0.211	Positive/Weak	0.079	Not Significantly Correlated
Basic Operation	0.197	Positive/Weak	0.102	Not Significantly Correlated

**Significant at* $\alpha = 0.05$

The integration of technology in the classroom is increasingly recognized as a vital component of modern education, potentially enhancing student engagement, and learning outcomes. Understanding the relationship between teachers' utilization of technology integration and pupils' performance across various mathematical domains is crucial for informing instructional practices and curriculum development. This table presents the correlation coefficients and p-values assessing the relationship between teachers' level of technology integration and their pupils' performance in key areas: number, color, and shape recognition; understanding of quantity; patterns and sorting; measurement concepts; and basic operations.

The analysis reveals that all correlation coefficients indicate a positive but weak relationship between the level of technology integration and pupil performance across the assessed dimensions. For Number, Color, and Shape Recognition, the correlation coefficient is 0.188 (p=0.120), which suggests not significantly correlated. In the area of Understanding of Quantity, the coefficient is 0.178 (p=0.139), indicating not significantly correlated results as well. For Patterns and Sorting, the coefficient is 0.172 (p=0.155), also demonstrating not significantly correlated. The Measurement Concepts dimension shows a higher correlation coefficient of 0.212 (p=0.078), nearing significance but still classified as not significantly correlated. Finally, for Basic Operations, the correlation coefficient is 0.141 (p=0.245), also indicating not significantly correlated.

The findings suggest that while there is a positive relationship between the level of utilization of technology integration and pupil performance across various mathematical domains, the correlations are weak and not statistically significant. This implies that other factors may be influencing pupil performance more significantly than technology integration alone. It may be beneficial for educators to investigate additional instructional strategies, engagement techniques, and resources that could enhance student learning outcomes. Furthermore, professional development focused on effective technology integration methods and pedagogical strategies may help teachers maximize the impact of technology in their classrooms. Future research could explore additional variables such as student motivation, classroom

dynamics, and teacher training on technology usage to provide a more nuanced understanding of how technology affects pupil performance.

The effect of technology on students' mathematics performance is a subject of significant debate and research. While some studies have shown that technology can improve student mathematics performance, others have found no significant difference. One study found that technology-based learning interventions, such as gamification and interactive software, resulted in improved mathematics performance for students (Hillmayr et al, 2020). Furthermore, technology can provide students with immediate feedback on their work, allowing them to self-correct and adjust more quickly. However, technology is not a panacea for improving mathematics performance (Gomez-Garcia et al., 2020). Additionally, the use of technology in teaching and learning mathematics can have a positive effect on students' mathematics interest (Kelley et al, 2020).

Table 23

Significant Relationship of Teachers' Level of Utilization of Technology Integration to the Performance of their Pupils

Variable	Correlation Coefficient	Degree of Relation	p-value	Conclusion
Number, Color, and Shape Recognition	0.188	Positive/Weak	0.120	Not Significantly Correlated
Understanding of Quantity	0.178	Positive/Weak	0.139	Not Significantly Correlated
Patterns and Sorting	0.172	Positive/Weak	0.155	Not Significantly Correlated
Measurement Concepts	0.212	Positive/Weak	0.078	Not Significantly Correlated
Basic Operation	0.141	Positive/Weak	0.245	Not Significantly Correlated

**Significant at* $\alpha = 0.05$

Experiential learning is an educational approach that emphasizes learning through experience and reflection, enabling students to engage actively with the material and apply their knowledge in real-world contexts. Understanding the relationship between teachers' utilization of experiential learning and pupils' performance across various mathematical domains is essential for assessing the effectiveness of this pedagogical approach. This table presents the correlation coefficients and p-values that evaluate the relationship between the level of utilization of experiential learning and pupils' performance in key areas: number, color, and shape recognition; understanding of quantity; patterns and sorting; measurement concepts; and basic operations.

The analysis reveals that all correlation coefficients indicate a positive but weak relationship between the level of utilization of experiential learning and pupil performance across the assessed dimensions. For Number, Color, and Shape Recognition, the correlation coefficient is 0.129 (p=0.287), which suggests not significantly correlated. In the area of Understanding of Quantity, the coefficient is 0.082 (p=0.501), indicating not significantly correlated results as well. For Patterns and Sorting, the coefficient is 0.062 (p=0.612), also demonstrating not significantly correlated. The Measurement Concepts dimension shows a correlation coefficient of 0.124 (p=0.307), indicating not significantly correlated results. Lastly, for Basic Operations, the correlation coefficient is 0.116 (p=0.341), also indicating not significantly correlated.

The findings suggest that while there is a positive relationship between the level of utilization of experiential learning and pupil performance across various mathematical domains, the correlations are weak and not statistically significant. This indicates that other factors may be influencing pupil performance more significantly than experiential learning alone. Educators might explore additional instructional strategies, engagement techniques, and supportive resources to further enhance student learning outcomes. Additionally, professional development focused on implementing experiential learning effectively may empower teachers to create more engaging and impactful learning experiences for their pupils. Future research could investigate other variables, such as student engagement, teaching style, or classroom environment, to gain a deeper understanding of how experiential learning impacts pupil performance.

Based on the study of Charles-Ogan and Onyeka (2023), the experiential teaching method is based on the principle of learning by doing, as students acquire knowledge after having experienced or done somewhat innovative. Thus, the experiential teaching method focuses on students' own life experiences and comprises a high degree of involvement. According to McCrann (2016), in the experiential teaching method, learners are dynamically engaging in activities or experiences. The students acquire knowledge

by doing. This means that the experiential teaching method helps learners in the acquisition of skills and the construction of knowledge from the direct outcome of the experience. The learner is said to have the capability to select and partake in practices that will improve performance and retention. The experiential teaching method raises students' cognition levels, upsurges the use of critical thinking skills, and therefore enhances students' ability to obtain, retain, and retrieve knowledge, hence augmenting performance. Moreover, students using experiential learning-based teaching material in mathematics in their schools had higher cognitive ability than students who did not use experiential learning-based teaching material in mathematics in their school (Fitri, 2017).

Table 24

Significant Relationship of Teachers' Level of Utilization of Experiential Learning to the Performance of their Pupils

Variable	Correlation Coefficient	Degree of Relation	p-value	Conclusion
Number, Color, and Shape Recognition	0.129	Positive/Weak	0.287	Not Significantly Correlated
Understanding of Quantity	0.082	Positive/Weak	0.501	Not Significantly Correlated
Patterns and Sorting	0.062	Positive/Weak	0.612	Not Significantly Correlated
Measurement Concepts	0.124	Positive/Weak	0.307	Not Significantly Correlated
Basic Operation	0.116	Positive/Weak	0.341	Not Significantly Correlated

**Significant at* $\alpha = 0.05$

Collaborative learning is an instructional approach that emphasizes group work and peer interaction to enhance student learning outcomes. This method encourages communication, critical thinking, and problem-solving skills among pupils. Understanding the relationship between teachers' utilization of collaborative learning and pupils' performance in various mathematical domains is crucial for assessing the effectiveness of this strategy. This table presents the correlation coefficients and p-values that evaluate the relationship between the level of utilization of collaborative learning and pupils' performance in key areas: number, color, and shape recognition; understanding of quantity; patterns and sorting; measurement concepts; and basic operations.

The analysis shows that most correlation coefficients indicate a positive but weak relationship between the level of utilization of collaborative learning and pupil performance, with one exception. For Number, Color, and Shape Recognition, the correlation coefficient is 0.080 (p=0.509), indicating not significantly correlated. In the area of Understanding of Quantity, the coefficient is 0.134 (p=0.267), which also suggests not significantly correlated results. For Patterns and Sorting, the correlation coefficient is 0.191 (p=0.113), demonstrating a not significantly correlated outcome. The Measurement Concepts dimension shows a correlation coefficient of 0.216 (p=0.072), indicating a not significantly correlated result, albeit close to significance. However, for Basic Operations, the correlation coefficient is 0.264 (p=0.027), which is categorized as a positive/moderately weak correlation and is significantly correlated.

The findings suggest that while there is a generally positive relationship between the level of utilization of collaborative learning and pupil performance across various mathematical domains, most correlations are weak and not statistically significant. Notably, the significant correlation with Basic Operations indicates that collaborative learning may have a more pronounced effect in this area, suggesting its potential as an effective instructional strategy for enhancing pupils' understanding and skills in basic operations. Educators may benefit from incorporating more collaborative learning opportunities, particularly in teaching basic operations, to foster greater student engagement and understanding. Additionally, further research could explore other variables that might enhance the effectiveness of collaborative learning, such as group dynamics, peer influence, or specific instructional techniques. By leveraging collaborative learning effectively, teachers can create a more interactive and supportive learning environment that promotes better educational outcomes.

When it comes to the teaching and learning process, collaborative learning refers to a collection of teaching and learning techniques that encourage learners to work together in small groups (Le et al., 2018). In addition, the very essence of collaborative learning is working together toward a shared goal. This implies that in addition to their learning, learners are accountable for one another's academic progress (Ismail et al., 2018).

Following the DepEd memo No. 8, s. 2023 Multi-Year Guidelines on the Results-Based Performance Management System – Philippine Professional Standards for Teachers (RPMS-PPST), Classroom Observation Tool (COT) – RPMS for Proficient teacher under it. As mentioned in the said memorandum, under KRA 1 on Content Knowledge and Pedagogy, teachers who use the proficient tools are expected to apply a variety of teaching and learning strategies that are well aligned with the needs of both individual and group learning. It also encourages learners to participate, cooperate, and collaborate to improve learners' academic performance. Additionally, empirical studies on learners' engagement and collaborative learning have shown a favorable relationship between these two areas (Vega-Abarzua et al., 2022). Collaborative learning has proven to be effective in developing relationships with peers and, most especially, creating better work (Pahomov, 2018).

Table 25

Significant Relationship of Teachers' Level of Utilization of Collaborative Learning to the Performance of their Pupils

Variable	Correlation Coefficient	Degree of Relation	p-value	Conclusion
Number, Color, and Shape Recognition	0.080	Positive/Weak	0.509	Not Significantly Correlated
Understanding of Quantity	0.134	Positive/Weak	0.267	Not Significantly Correlated
Patterns and Sorting	0.191	Positive/Weak	0.113	Not Significantly Correlated
Measurement Concepts	0.216	Positive/Weak	0.072	Not Significantly Correlated
Basic Operation	0.264*	Positive/Moderately Weak	0.027	Significantly Correlated

**Significant at* $\alpha = 0.05$

Understanding the challenges teachers face in utilizing differentiated instruction is crucial for improving teaching practices and enhancing student learning outcomes. The relationship between the level of utilization of differentiated instruction and self-assessment of challenges such as lack of resources, insufficient training, struggling learners, and classroom management issues provides insight into the factors that may hinder effective instruction. This table presents the correlation coefficients and p-values assessing the relationship between teachers' utilization of differentiated instruction and their self-reported challenges in its implementation.

The analysis reveals that all correlation coefficients indicate a positive but weak relationship between the level of utilization of differentiated instruction and the self-assessment of various challenges, though none of the correlations are statistically significant. For Lack of Resources, the correlation coefficient is 0.152 (p=0.208), indicating not significantly correlated. In the case of Insufficient Training, the coefficient is 0.204 (p=0.091), also suggesting not significantly correlated results. The correlation for Struggling Learners is 0.213 (p=0.077), demonstrating a not significantly correlated outcome that is close to significance. Lastly, for Classroom Management Issues, the correlation coefficient is 0.218 (p=0.069), again indicating not significantly correlated, but also nearing significance.

The findings suggest that while there is a positive relationship between the level of utilization of differentiated instruction and teachers' self-assessment of challenges, these relationships are weak and not statistically significant. This indicates that factors such as lack of resources, insufficient training, and classroom management issues may not directly impede the utilization of differentiated instruction as perceived by teachers. However, the near-significant correlations with struggling learners and classroom management issues suggest areas where teachers may perceive these challenges as influencing their instructional practices. Professional development focused on addressing these challenges, particularly through resource allocation, training programs, and effective classroom management strategies, could enhance teachers' ability to implement differentiated instruction effectively. Future research may explore additional contextual factors, such as school culture or administrative support, to provide a deeper understanding of how these challenges impact differentiated instruction utilization.

Research has shown that students learn in several ways, which also affects student engagement and motivation. Instruction should differentiate to benefit each student. Adjusting teaching methods to accommodate student learning preferences helps to increase student motivation and performance (Malacapay, 2019). There are a few ways to differentiate instruction. One is by considering Howard Gardner's Multiple Intelligences Theory. Gardner's theory currently states that there are nine intelligences

to consider when creating curriculum. It is important to provide students with ways to learn that are geared toward their preferred method of learning. (Sener & Cokcaliskan, 2018).

Aside from students' preferred methods of learning, teachers need instruction and need to have tools available to them to implement differentiated instruction into their classroom. Many teachers intend to differentiate, but struggle with how to incorporate these ideas and learning preferences into their classrooms. Other teachers feel they do not have enough time available to them, so they use it to a low extent (Onyishi & Sefotho, 2020). By providing teachers with training and time, teachers may become more comfortable with implementing differentiated instruction, which would have a positive impact on student learning (Bogen et al., 2019).

Table 26

Significant Relationship of Teachers' Level of Utilization of Differentiated Instruction to Their Self-Assessment on the Challenges Experienced in Its Utilization

Variable	Correlation Coefficient	Degree of Relation	p-value	Conclusion
Lack of Resources	0.152	Positive/Weak	0.208	Not Significantly Correlated
Insufficient Training	0.204	Positive/Weak	0.091	Not Significantly Correlated
Struggling Learners	0.213	Positive/Weak	0.077	Not Significantly Correlated
Classroom Management Issues	0.218	Positive/Weak	0.069	Not Significantly Correlated

**Significant at* $\alpha = 0.05$

The integration of technology in educational settings has become essential for enhancing teaching and learning processes. However, teachers often encounter various challenges that can impede effective technology utilization, such as a lack of resources, insufficient training, and classroom management issues. Understanding the relationship between the level of technology integration and teachers' self-assessment of these challenges provides valuable insights for improving instructional practices. This table presents the correlation coefficients and p-values assessing the relationship between teachers' utilization of technology integration and their self-reported challenges. Based on the study of Shahbodin & Pee (2018), technology is a major booster in increasing innovation in teaching-learning activities, providing different learning experiences, and providing broader learning opportunities for students. Additionally, the use of technology in learning mathematics creates opportunities for students to access mathematics more deeply and connect mathematics with real life. Along with the increasing problems and complexity of mathematics material, the digital learning ecosystem becomes an alternative for students, because mathematics learning becomes interactive, dynamic, investigative, and process-oriented due to technological involvement. In the end, it becomes a capital that can direct students towards discovery-oriented mathematics and strengthen deeper understanding through reflection and critical thinking. Learning mathematics using technology becomes more interesting, motivating, provides opportunities for learning while playing, encourages students to explore problems, produce guesses, and seek explanations while sharing their findings with their peers and teachers, and increases opportunities for collaboration (Freiman & Tassell, 2018).

The analysis shows that while most correlation coefficients indicate a positive but weak relationship, there is one significant correlation. For Lack of Resources, the correlation coefficient is 0.166 (p=0.170), suggesting not significantly correlated. In the case of Insufficient Training, the coefficient is 0.271 (p=0.023), indicating a positive/moderately weak relationship that is significantly correlated. For Struggling Learners, the correlation coefficient is 0.103 (p=0.395), which indicates not significantly correlated results. Finally, for Classroom Management Issues, the correlation coefficient is 0.164 (p=0.175), also demonstrating a not significantly correlated outcome.

The findings suggest that there is a significant relationship between the level of utilization of technology integration and teachers' self-assessment of insufficient training. This implies that as teachers integrate technology more effectively, their perception of the challenges associated with insufficient training becomes more pronounced. The positive correlation highlights the need for targeted professional development focused on enhancing teachers' technological competencies and providing adequate training to address the challenges they face. Although the relationships with lack of resources, struggling learners, and classroom management issues are positive but weak, they still indicate areas where teachers may feel these challenges affect their technology utilization. Addressing these challenges through resource allocation and training can further support teachers in effectively integrating technology into their instruction. Future research could explore additional factors that may influence these relationships, such as the specific

types of technology used, teacher attitudes toward technology, and the support provided by school administration.

Technology-incorporated instructional practices not only enhance the quality of teaching (Akram et al., 2021) but also enable students to develop their skills, boost their motivation, and enhance their knowledge and information efficiently (Chen et al., 2018). However, teachers faced difficulties in making the best use of ICT in their instructional practices due to inadequate technological competencies, yet the transitory phase improved their digital skills. Furthermore, the utilization of ICT in education for enhancing instructional practices' effectiveness has been considered crucial for the last few decades worldwide (U.S. Department of Education, 2017).

Table 27

Significant Relationship of Teachers' Level of Utilization of Technology Integration to their Self-Assessment on the Challenges Experienced in its Utilization

Variable	Correlation Coefficient	Degree of Relation	p-value	Conclusion
Lack of Resources	0.166	Positive/Weak	0.170	Not Significantly Correlated
Insufficient Training	0.271*	Positive/Moderately Weak	0.023	Significantly Correlated
Struggling Learners	0.103	Positive/Weak	0.395	Not Significantly Correlated
Classroom Management Issues	0.164	Positive/Weak	0.175	Not Significantly Correlated

**Significant at* $\alpha = 0.05$

Experiential learning is a pedagogical approach that emphasizes active participation and real-world application in the learning process. However, teachers may encounter various challenges that can affect the effective utilization of experiential learning strategies, such as a lack of resources, insufficient training, struggling learners, and classroom management issues. Understanding the relationship between the level of utilization of experiential learning and teachers' self-assessment of these challenges is essential for improving instructional practices. This table presents the correlation coefficients and p-values that assess the relationship between teachers' utilization of experiential learning and their self-reported challenges.

National Education Policy (NEP) 2020 highlighted that experiential learning will be adopted as standard pedagogy for every subject at all stages, with an exploration of relations among different subjects. Today, experiential learning has become an essential method in all new innovative pedagogical practices as it holistically strives to shift the learning of the students from rote learning to learning by doing and by self-experience. However, many initiatives have been taken by Indian's state and central governments to incorporate experiential learning in school education to emphasize learning by doing and reflecting on experiences (Kumar & Kumari, 2019).

The analysis reveals that all correlation coefficients indicate a positive but weak relationship between the level of utilization of experiential learning and teachers' self-assessment of challenges, with none reaching statistical significance. For Lack of Resources, the correlation coefficient is 0.070 (p=0.563), indicating not significantly correlated. In the area of Insufficient Training, the coefficient is 0.122 (p=0.315), suggesting not significantly correlated results as well. The correlation for Struggling Learners is 0.049 (p=0.687), demonstrating a not significantly correlated outcome. Lastly, for Classroom Management Issues, the correlation coefficient is 0.010 (p=0.932), which also indicates not significantly correlated.

The findings suggest that there is no significant relationship between the level of utilization of experiential learning and teachers' self-assessment of challenges experienced in its implementation. This indicates that the challenges related to resources, training, struggling learners, and classroom management do not appear to significantly affect how teachers employ experiential learning strategies. However, the weak positive correlations may reflect a general awareness among teachers of the potential impact of these challenges on their instructional practices. To enhance the effectiveness of experiential learning, professional development initiatives may need to focus on addressing the specific challenges teachers face. For example, providing adequate resources, improving training opportunities, and offering strategies for managing diverse learners in the classroom can empower teachers to implement experiential learning more effectively. Future research could investigate additional factors that may influence these relationships, such as school culture, administrative support, or teacher collaboration.

Table 28
Significant Relationship of Teachers' Level of Utilization of Experiential Learning to their Self-Assessment on the Challenges Experienced in its Utilization

Variable	Correlation Coefficient	Degree of Relation	p-value	Conclusion
Lack of Resources	0.070	Positive/Weak	0.563	Not Significantly Correlated
Insufficient Training	0.122	Positive/Weak	0.315	Not Significantly Correlated
Struggling Learners	0.049	Positive/Weak	0.687	Not Significantly Correlated
Classroom Management Issues	0.010	Positive/Weak	0.932	Not Significantly Correlated

**Significant at* $\alpha = 0.05$

Collaborative learning is an instructional strategy that promotes student interaction and teamwork to enhance learning outcomes. However, teachers may face various challenges when implementing collaborative learning, such as a lack of resources, insufficient training, struggling learners, and classroom management issues. Understanding the relationship between the level of utilization of collaborative learning and teachers' self-assessment of these challenges is essential for optimizing instructional practices. This table presents the correlation coefficients and p-values that assess the relationship between teachers' utilization of collaborative learning and their self-reported challenges. According to Meijer et al. (2020), one of the main challenges for teachers and students is the assessment of collaborative learning activities.

The analysis indicates that all correlation coefficients show a positive but weak relationship between the level of utilization of collaborative learning and teachers' self-assessment of challenges, with none achieving statistical significance. For Lack of Resources, the correlation coefficient is 0.097 (p=0.423), suggesting not significantly correlated. In the area of Insufficient Training, the coefficient is 0.105 (p=0.388), indicating not significantly correlated results. The correlation for Struggling Learners is 0.098 (p=0.420), also demonstrating a not significantly correlated outcome. Lastly, for Classroom Management Issues, the correlation coefficient is 0.030 (p=0.805), indicating not significantly correlated.

The findings suggest that there is no significant relationship between the level of utilization of collaborative learning and teachers' self-assessment of the challenges they experience in its implementation. This indicates that the challenges related to resources, training, struggling learners, and classroom management do not significantly impact how teachers engage in collaborative learning practices. However, the weak positive correlations may suggest a general acknowledgment among teachers of the potential influences these challenges could have on their instructional methods. To enhance the effectiveness of collaborative learning, professional development initiatives could focus on addressing specific barriers teachers face. For instance, providing training on effective collaboration strategies, resource management, and techniques for managing diverse learners may empower teachers to implement collaborative learning more successfully. Future research could explore additional factors, such as institutional support, peer collaboration, and teacher attitudes toward collaboration, that may influence the effectiveness of collaborative learning practices.

Table 29
Significant Relationship of Teachers' Level of Utilization of Collaborative Learning to their Self-Assessment on the Challenges Experienced in its Utilization

Variable	Correlation Coefficient	Degree of Relation	p-value	Conclusion
Lack of Resources	0.097	Positive/Weak	0.423	Not Significantly Correlated
Insufficient Training	0.105	Positive/Weak	0.388	Not Significantly Correlated
Struggling Learners	0.098	Positive/Weak	0.420	Not Significantly Correlated
Classroom Management Issues	0.030	Positive/Weak	0.805	Not Significantly Correlated

**Significant at* $\alpha = 0.05$

CONCLUSIONS

Based on the analysis and interpretation of the data, the following conclusions were drawn. These conclusions highlight the teaching strategies utilized by Kindergarten and Grade 1 teachers under the MATATAG Curriculum, the challenges encountered in utilization of these strategies and the performance of the pupils.

The respondents of the study are all females, which aligns with the common trend of Kindergarten and Grade 1 being commonly handled by female teachers. The majority of respondents fall into the 30-50 years old, suggesting that these teachers have accumulated significant experience in the field. Greater portions hold at least a bachelor's degree, indicating a strong educational foundation within this group. Additionally, in terms of professional experience, several respondents have worked for more than 10 years, which further suggests that highly experienced educators. Furthermore, the fact that more teachers work in medium-sized schools implies that the sample represents a specific type of educational environment. Overall, this group of respondents is both highly experienced and well-educated, making their perspectives and insights invaluable for understanding the challenges and strategies in early mathematics education. Their knowledge and expertise contribute significantly to the study's ability to provide informed recommendations for improving teaching and learning.

Teachers consistently implemented the four key teaching strategies advocated by the MATATAG Curriculum—differentiated instruction, technology integration, experiential learning, and collaborative learning—demonstrating a strong commitment to enhancing the educational experience of their pupils. The frequent use of these strategies, as reflected by the average response of "Always," highlights their importance in promoting essential skills for Kindergarten and Grade 1 pupils. This consistent implementation suggests that teachers are effectively creating a dynamic and supportive environment conducive to developing fundamental skills among young learners.

The teachers frequently encounter challenges in utilizing the teaching strategies, as reflected by the "Often" response of the majority of respondents. These challenges include a lack of resources, insufficient training, struggling learners, and classroom management issues. The common nature of these challenges signifies that addressing these issues is crucial for improving the effectiveness of instructional practices and supporting teachers in implementing the strategies successfully. By providing additional resources, comprehensive professional development, and a support system, this will empower teachers to deliver high-quality instruction and successful implementation of the Matatag Curriculum.

Pupils are performing at a “Good” level across the key areas of early mathematics education. This indicates strong performance across various dimensions of early mathematics education. Their competencies in number, color, and shape recognition, as well as understanding of quantity, patterns and sorting, measurement concepts, and basic operations, highlight the strengths of the pupils. These insights are valuable for guiding instructional practices and informing curriculum development for further support of pupils' learning and development in early mathematics.

There is a significant generational difference in the use of specific teaching strategies, particularly in the areas of technology integration and experiential learning. Younger teachers are more inclined to incorporate modern technological tools and engage pupils through hands-on, experience-based methods. In contrast, older teachers tend to employ a more balanced and consistent use of various instructional strategies, without a marked preference for these innovative approaches. This suggests that age may play a role in shaping pedagogical choices, particularly in the adoption of contemporary teaching methods.

There is a positive relationship between teaching strategies and student performance, but the correlations are generally weak and statistically insignificant. However, an exception has been found in the collaborative learning strategy, which demonstrated a positive yet moderately weak and statistically significant correlation with pupils' performance in basic operations. This indicates that collaborative learning may have a more meaningful impact on pupils' understanding and skills in this area. Although the overall relationship between teaching strategies and performance is weak, the positive effect of collaborative learning on basic operations highlights its potential as an effective strategy in early mathematics education. The findings point to the value of fostering collaborative learning environments, which could lead to enhanced mathematical skills, particularly in areas like basic operations.

There is a positive but weak relationship between the level of utilization of the following teaching strategies (differentiated instruction, experiential learning, and collaborative learning) and the challenges experienced by the teachers; none of these correlations is statistically significant. However, a significant correlation was found between technology integration and teachers' self-assessment of insufficient training. This signifies that as teachers incorporate more technology, their awareness of the training gap increases, emphasizing the need for specific professional development to improve technological skills. Additionally,

while the relationship with challenges like lack of resources, struggling learners, and classroom management issues is weak, they still suggest that these factors may impact how effectively teachers use teaching strategies in delivering the lessons.

RECOMMENDATIONS

Based on the conclusion, the following recommendations are proposed to enhance the teaching and learning of mathematical fundamentals among Kindergarten and Grade 1 pupils under the MATATAG Curriculum. These recommendations aim to support teachers in addressing instructional challenges, improving pedagogical practice, and promoting better learning outcomes of the pupils.

Develop and improve teaching practices and provide professional development to enhance teaching methods for the development of mathematical fundamentals of the pupils. Tailored training programs could address emerging trends in education, such as technology integration and differentiated instruction. Additionally, as the majority have over 10 years of experience, mentorship and leadership development opportunities could be offered to support career growth and share the best practices across schools.

Enhance teachers' training for professional development opportunities that focus on advancing strategies, particularly in areas where they may be underutilized and less effective. Fostering a collaborative community of practice among teachers can allow for the sharing of successful approaches, challenges, and insights, ensuring continuous improvement and alignment with the evolving needs of the pupils.

Provide adequate resources, such as teaching materials and technological tools, to support teachers in delivering the lessons effectively. The frequent challenges faced by diverse learners highlight the need for targeted interventions and professional development focused on differentiated instruction and inclusive practices. Supporting teachers on professional development, like seminars and training addressing these interconnected challenges holistically, will be essential for fostering an environment where teachers can effectively implement the curriculum and enhance student learning experiences.

Continuously evaluate instructional practices through regular and comprehensive assessment to guide the effective teaching and learning process. Provide teachers with targeted professional development opportunities that focus on enhancing their expertise in key areas, like number sense, understanding of quantity, patterns and sorting, measurement concepts, and especially basic operations. This professional growth should be supported by evidence-based strategies and resources that address the specific needs of young learners. Additionally, by prioritizing these areas, teachers can significantly elevate the quality of instruction and improve student outcomes.

Provide professional development opportunities that focus on technology integration and experiential teaching strategies. Novice teacher could benefit from mentorship programs where experienced educators share insights on a broader range of teaching strategies, while older teacher may benefit from training that emphasizes the effectiveness of using technology and hands-on learning approaches. Encourage collaboration and knowledge sharing between teachers of varying experience levels to promote balanced and innovative teaching-and-learning environment.

Focus on strengthening the implementation of current approaches to increase impact. Specifically, the significant correlation with basic operations suggests that collaborative learning may be particularly effective in this area. To maximize its potential, further integration to collaborative learning method in teaching basic operations should be explored and developed. Additionally, ongoing professional development and research on the effectiveness of these strategies can help identify best practices for enhancing mathematical fundamentals of the pupils.

Prioritize targeted professional development focused on enhancing teachers' skills in technology. Providing comprehensive training that addresses both the effective use of technology and the challenges teachers face in utilizing it will help bridge this gap. Equip teachers with the strategies to better manage challenges such as lack of resources, struggling learners, and classroom management issues, thus enhancing their overall teaching effectiveness, especially when integrating technology in the classroom.

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