Journal of Arts, Humanities and Social Science (JAHSS)

ISSN: 3006-9491 (Online)

Volume 2 Issue 2, (2025)

https://doi.org/10.69739/jahss.v2i2.569

https://journals.stecab.com/jahss

Published by
Stecab Publishing

Research Article

Analyzing Educator's Perceptions and Implementation of Positivism in Elementary Mathematics Education

*[1]Darryl Jhet P. Bartolome, [1]Julius S. Valderama

About Article

Article History

Submission: April 06, 2025
Acceptance : May 14, 2025
Publication : May 28, 2025

Keywords

Implementation, MATATAG Curriculum, Mathematics Instruction, Perception, Positivism

About Author

[1] College of Arts and Sciences, Nueva Vizcaya State University - Bayombong, Nueva Vizcaya, Philippines

Contact @ Darryl Jhet P. Bartolome
djbart178@gmail.com

ABSTRACT

The study aimed to analyze educator's perception and implementation of positivism in elementary mathematics education, specifically with the San Mateo South District. The study was conducted to determine the extent to which teachers perceived positivist principles, how teachers implement these in their classroom practice, and whether a significant relationship exists between their perception and implementation. The study employed a quantitative-descriptive correlational design using a researcher-made questionnaire that was validated using content validity index among three (3) experts and subjected to pilot testing among 10 elementary teachers from the nearby district, yielded with a reliability coefficient of 0.922. The respondents included all 57 public elementary mathematics teachers. Data were analyzed using mean, standard deviation, and Kendall Tau correlation. Results revealed that educators strongly perceived positivist strategies such as drills, standardized assessments, and memorizations as essential components of effective mathematics instruction, and these strategies were also found to be highly implemented in classroom actual implementation. Moreover, a significant and moderately strong positive correlation was found, conforming that teachers' perceptions are directly linked to their instructional implementation. These findings suggest that despite curriculum reforms under the MATATAG framework, positivist philosophies continue to influence classroom practices. The study recommends the integration of professional development programs that align teachers' beliefs with evolving pedagogical models, allowing for a gradual integration of teacher-centered (Positivism) to learner-centered (Constructivism) classrooms.

Citation Style:

Bartolome, D. J. P., & Valderama, J. S. (2025). Analyzing Educator's Perceptions and Implementation of Positivism in Elementary Mathematics Education. *Journal of Arts, Humanities and Social Science, 2*(2), 95-103. https://doi.org/10.69739/jahss.v2i2.569

1. INTRODUCTION

Mathematics is a fundamental component of basic education, shaping students' abilities in logical reasoning, problem-solving, and analytical thinking (Agbata *et al.*, 2024). It equips learners with essential skills for navigating both academic challenges and real-world situations. The quality of mathematics instruction plays a vital role in promoting conceptual understanding and the development of higher-order thinking skills (Ansya *et al.*, 2024). As numerous scholars have emphasized, teachers' instructional decisions are not purely technical but are influenced by their underlying beliefs and philosophies (Li & Schoenfeld, 2019; Mapolelo & Akinsola, 2015).

Historically, mathematics education has been shaped by positivist principles. Rooted in the theories of Auguste Comte, positivism emphasizes objectivity, empirical validation, and structured, systematic teaching (Khanday *et al.*, 2024). In classrooms, this has translated into teacher-centered instruction, characterized by rote memorization, formulaic procedures, and standardized assessments (Bhalla, 2024). While such approaches are effective in developing procedural fluency and discipline, they may also hinder creativity, conceptual exploration, and learner autonomy—skills now emphasized in modern educational frameworks.

In response to these limitations, the MATATAG Curriculum introduced by the Philippine Department of Education (DepEd Order No. 10, s.2024) advocates for a learner-centered, constructivist approach. It prioritizes holistic development, critical thinking, and contextualized learning (Kilag *et al.*, 2024). However, despite these progressive goals, a growing concern persists: many teachers continue to rely on traditional positivist strategies, such as direct instruction, drills, and rigid assessments, creating a gap between curriculum intentions and actual classroom practices.

Although prior studies have examined teaching styles under the K–12 and MATATAG curricula, limited research has specifically focused on the persistence of positivist methods in elementary mathematics education. Moreover, little is known about how teachers perceive positivist approaches and how those perceptions influence their actual teaching practices within the context of curriculum reform. This gap in the literature calls for a closer investigation of the alignment—or misalignment—between teachers' philosophical orientations and current pedagogical expectations.

To bridge this gap, the present study investigates the perceptions and implementation of positivism among educators in elementary mathematics education, specifically in the San Mateo South District. It aims to clarify whether positivist strategies remain embedded in teaching practices and to what extent they align or conflict with the learner-centered goals of the MATATAG curriculum. Furthermore, the study seeks to identify the challenges educators face in transitioning from positivist traditions to constructivist methods.

Exploring the philosophical underpinnings of instructional behavior, this study contributes to a more comprehensive understanding of curriculum implementation. It intends to provide evidence-based insights and recommendations that will support policymakers, school leaders, and teacher education programs in enhancing instructional alignment and improving learning outcomes in mathematics. This study aimed to investigate the perceptions and implementation of positivism among educators in elementary mathematics education, specifically in the San Mateo South District. While the MATATAG curriculum strongly promotes learner-centered approaches, the extent to which positivist philosophies continue to shape teaching practices remains unclear. This research intends to clarify that instructional reality through the following objectives: (1) To determine the extent to which educators perceive positivism as a guiding framework in elementary mathematics, (2) To examine how educators implement positivist principles in their teaching methodologies and classroom practices, and (3) To analyze the relationship between educators' perception of positivism and their actual classroom implementation in elementary mathematics education.

2. LITERATURE REVIEW

This study is grounded in the theory of Positivism, which emphasizes empirical evidence, objectivity, and structure in the generation and dissemination of knowledge (Alakwe, 2017). As a philosophical foundation, positivism serves as the guiding lens to explore how educators perceive and apply traditional, teacher-centered instructional strategies, particularly within the context of a curriculum that advocates for constructivist approaches.

Originally developed by Auguste Comte, positivism asserts that valid knowledge is derived from observable and measurable phenomena that can be verified through scientific inquiry. In the field of education, this translates into structured, direct instruction where the teacher is positioned as the central authority and students are treated as passive recipients of knowledge (Ghaleb, 2024). According to Raj (n.d.), positivism encourages teaching strategies that prioritize rote memorization, standardized testing, and procedure-based mastery—strategies that are believed to promote consistency, objectivity, and measurable academic outcomes (William, 2024).

In practice, positivist approaches are most observable in mathematics instruction, where knowledge is presented as fixed and procedural. Teachers guide students step-by-step through operations, formulas, and algorithms, using repetition and drills to build procedural fluency. Standardized assessments are used to evaluate learning outcomes, with instructional success often measured through the accuracy of responses and mastery of procedures. While this model offers structure, clarity, and control, it may also suppress creativity, limit exploratory thinking, and marginalize students' conceptual understanding (Lo, 2024).

2.1. Positivism in practice: review of empirical studies

A growing body of empirical research confirms the continued dominance of positivist practices, particularly in mathematics classrooms. For example, Kasa *et al.* (2024) found that teachers with transmission-oriented beliefs were more likely to rely on explicit instruction and assessment-driven approaches, especially when teaching procedural subjects like mathematics. Similarly, Domingo and Masabpi (2024) reported that in Philippine schools, traditional instructional strategies such

as formulaic drills, teacher-led demonstrations, and rigid performance metrics remain prevalent—even under revised learner-centered curricula.

In a comparative context, Olofson and Garnett (2018) observed that while teachers may express support for progressive, constructivist learning, their actual classroom behaviors tend to revert to traditional, positivist routines. Factors such as high-stakes testing, limited time, classroom management concerns, and lack of professional development support often reinforce the continuation of these methods.

This global pattern is echoed in the Philippine educational setting, where despite the implementation of the MATATAG Curriculum—which emphasizes learner-centeredness, critical thinking, and contextualized learning—many teachers still default to conventional, teacher-centered instruction (Maguate, 2024). This discrepancy reveals a disconnect between curriculum policy and classroom reality, calling for a deeper analysis of the philosophical beliefs that underlie teacher behavior.

2.2. Application to the current study

In this study, positivism is used as the theoretical foundation to examine both the perception and implementation of teaching practices among elementary mathematics educators. It informed the development of the research instrument by guiding the formulation of items that reflect teacher-centered instructional characteristics, including the use of direct instruction, standardized assessments, and reliance on fixed procedures.

More importantly, this framework helped establish criteria for evaluating whether these practices align with or deviate from the learner-centered goals of the MATATAG Curriculum. As such, positivism not only shaped the study's conceptual foundation but also served as the basis for operationalizing key variables.

The study focused on two primary variables: (1) Educators' perception of positivism (independent variable) and (2) Implementation of positivist strategies in their teaching (dependent variable). The correlation between these two variables was examined to assess whether teachers' instructional behaviors are consciously aligned with their beliefs or are retained as habitual practices, despite reforms. Understanding this relationship is critical to uncovering the philosophical tensions that may affect curriculum implementation, and offers insights into how deeply embedded teaching practices may be addressed through policy, training, and school-level support.

3. METHODOLOGY

3.1. Data analysis

This study employed a quantitative research approach utilizing a descriptive-correlational design to investigate educators' perceptions and implementation of positivism in elementary mathematics instruction within the San Mateo South District. The descriptive survey aspect of the research aimed to systematically gather data on teachers' perception and actual classroom practices related to positivist approach.

On the other hand, the correlational component of the study sought to examine the statistical relationship between educators' perceptions and their implementation of positivist principles. This design was deemed most appropriate for the study as it allowed the researcher to describe the current state of instructional practices while also exploring the degree of association between what teachers believe and what they practice. Through this combination, the study was able to provide a comprehensive understanding of how positivist approaches are perceived and applied within the context of the MATATAG curriculum framework.

3.2. Research locale

The study was conducted in San Mateo South District, which is under the jurisdiction of the Schools Division of Isabela, Legislative District 3. The district comprises 12 public elementary schools where mathematics instruction is delivered in alignment with the Department of Education's MATATAG Curriculum. This location was purposely selected as it represents a typical public elementary education setting where both traditional (positivist) and modern (constructivist) teaching approaches may coexist, making it suitable for examining how positivist principles are perceived and implemented in actual classroom practices. The actual conduct of the study took place from January to May 2025, covering the phases of instrument validation, pilot testing, administration of the final survey questionnaire, and data collection.

3.3. Participants of the study

The respondents of this study were all 57 public elementary mathematics teachers assigned within the San Mateo South District under the Schools Division of Isabela, Legislative District 3. These teachers were selected because they are directly involved in the planning, delivery, and evaluation of mathematics instruction at the elementary level, making them the most appropriate participants for exploring perceptions and implementation of positivist teaching approaches in the context of the MATATAG Curriculum. The study employed a total enumeration sampling technique. This means that all qualified elementary mathematics teachers within the district were included as respondents, without the use of any sampling or selection criteria. This total enumeration ensured a complete and accurate representation of the target population, thereby enhancing the validity and generalizability of the findings within the scope of the San Mateo South District.

3.4. Instrument development and validation

The data gathering tool of study was conducted into four 4 stages. First, the Generation of Statements Defining a Focus, the initial stage of the investigation focused on generating statements that encapsulate the fundamental principles of positivism in mathematics teaching. The development of these statements involved an in-depth review of existing literature concerning positivist philosophy, teacher-centered approaches, and their effects on student learning outcomes. Furthermore, an analysis of the MATATAG curriculum's principles will be conducted to uncover any potential areas of alignment or conflict with positivist strategies.

To guarantee that the statements align with the study's objectives, the subsequent guiding questions was utilized through expert panel discussion, (1) What are teachers' views

on the significance of positivist approaches, including rote memorization and standardized assessments, in the context of mathematics education? (2) Which classroom practices exemplify positivist methods in math instruction? (3) What approaches do educators use to integrate positivist methods alongside the learner-centered strategies advocated by the MATATAG curriculum?

All responses and discussions from the expert panel was framed as Likert-scale items to ensure alignment with the study's quantitative approach. The generated statements covered dimensions such as teacher perceptions and its implementation (instructional strategies, student assessment methods, and the perceived impact of positivist approaches on student learning). Secondly, Content Validation Through Expert Evaluation. The draft statements were presented to a panel of experts comprising: Three Doctor of Philosophy holder. Experts evaluated the statements for clarity, relevance, and alignment with the study's focus. Experts used a Content Validity Index (CVI) to rate each statement. Statements with a CVI score below 0.7 was removed to ensure that only valid and meaningful items are retained.

Next, Rephrasing and Refinement of Statements. Based on expert feedback, the statements were revised to improve clarity, coherence, and neutrality. The refinement process simplified language and guarantee uniformity in tone and structure. Furthermore, the statements were closely aligned with the fundamental dimensions of the study, particularly emphasizing perceptions and implementations associated with positivism in teaching elementary mathematics. Statements that are redundant or unnecessarily complicated was streamlined, and those with similar meanings were merged. This process is designed to create a refined and targeted tool that accurately reflects the goals of the study.

Lastly, Pilot Testing of Statements. The refined statements undergo pilot testing with a group of 10 elementary mathematics teachers from San Mateo North District that shares comparable demographic and educational characteristics. The pilot test aimed to evaluate how clear and understandable each statement is, making certain that respondents can easily grasp and interpret the items presented. Additionally, the instrument's reliability assessed through Cronbach's Alpha, the overall reliability of the instrument, which combines both questionnaires, resulted in a Cronbach's Alpha of 0.922 across all 26 items (George & Mallery, 2003). This procedure guaranteed that the ultimate collection of statements is both reliable and accurate, prepared for comprehensive data gathering.

3.5. Data collection

The study followed a systematic and ethical approach in gathering the data. First, the researcher sought and secured formal approval from the research adviser to proceed with the data collection phase of the study. Once approved, a letter of permission was prepared and submitted to the Principal In-Charge of San Mate South District, requesting authorization to conduct the study among all public elementary mathematics teachers in the district. Upon receiving approval from the district office, the researcher distributed a research consent form to all identified teacher- respondents. The consent form included important information about the purpose of the study, the voluntary nature of participation, data confidentiality, and assurance that no harm or risk was involved. Teachers who agreed to participate were required to sign the consent form before proceeding with the survey. Following the collection of consent forms, the researcher facilitated the administration of the validated survey questionnaire through Google Forms. The use of online platform was intended to ensure convenience and accessibility for respondents, while also allowing efficient data collection and tracking. After data collection period, responses were downloaded, and tabulated and subjected to statistical analysis in line with the objectives of the study and served as the basis for interpretation and presentation of results.

3.6. Data analysis

For the treatment of data and statistical tools, the results in problem 1 and 2 utilized mean and standard deviation to determine the extent to which educators perceived and implement positivism in elementary mathematics education. The result for problem 3, which sought to analyze the relationship between educators' perception and implementation, the Kendall Tau correlation coefficient was used.

4. RESULTS AND DISCUSSION

Section 1. Perception on positivism in elementary mathematics

Table 1. Extent of perception of educators on positivism as a guiding framework in elementary mathematics

Indicators	Mean	SD	Interpretations
Rote memorization is essential in developing foundational mathematical skills.	3.39	0.559	Highly Perceived
Standardized assessments are valuable tools in evaluating students' mathematical performance.	3.53	0.504	Highly Perceived
Positivist strategies such as drills and formula recall help improve students' computational fluency.	3.61	0.491	Highly Perceived
Memorization of basic math facts (e.g., multiplication tables) supports quick and efficient problem-solving.	3.63	0.555	Highly Perceived
Positivist methods help establish discipline and structure in teaching mathematical procedures.	3.53	0.538	Highly Perceived

Relying solely on memorization without conceptual understanding can limit students' mathematical growth.	3.40	0.593	Highly Perceived
Standardized tests do not fully reflect students' critical thinking or problem-solving abilities	2.98	0.744	Perceived
Positivist approaches are still relevant but must be complemented with learner-centered strategies.	3.46	0.503	Highly Perceived
Effective mathematics education should balance memorization with conceptual exploration.	3.53	0.538	Highly Perceived
Rote memorization, when contextualized, helps learners build confidence and fluency in solving math problems.	3.51	0.504	Highly Perceived
Positivist methods is that they serve best as support strategies within a broader, student-centered framework.	3.46	0.503	Highly Perceived
Direct instruction an effective approach for ensuring students' mastery of mathematical procedures.	3.53	0.504	Highly Perceived
Positivist strategies offer clarity and structure that help maintain discipline and focus in math classrooms.	3.54	0.503	Highly Perceived
Traditional methods like drills and repetition still have a place in today's learner development.	3.47	0.538	Highly Perceived
Objectivity in assessing mathematical skills, as promoted in positivist education, supports fairness in evaluation.	3.46	0.503	Highly Perceived
Despite recent curriculum shifts, positivist views still influence how most teachers conceptualize effective math teaching.	3.44	0.501	Highly Perceived
Overall Mean	**3.47**	**0.553**	**Highly Perceived**

Note: 1.00-1.75 Strongly Disagree; 1.76-2.50 Disagree; 2.51-3.25 Perceived; 3.26-4.00 Highly Perceived

The means and interpretations on the extent of perception of educators at San Mateo South District on positivism as a guiding framework in elementary mathematics education is presented in table 1. The data revealed that the overall mean score is 3.47 and a standard deviation of 0.553 corresponding to the interpretation of "Highly Perceived". The result implies that educators in San Mateo South District, in general, possess a positive perception of positivist principles, perceiving them relevant and applicable in the context of elementary mathematics education (Mariamah *et al.*, 2021). Similarly, Acharya (2023) mentioned that these principles in Positivist approach includes transferring of knowledge, standardized assessments and drills. Among the indicators, indicator 4 or "Memorization of basic math facts (e.g., multiplication tables) supports quick and efficient problem-solving." appeared to have the highest mean score of 3.63 which suggest that teachers consider rote memorization as an important tool for developing computational fluency among learners. This is in consonance with the practice of memorizing multiplication tables as a conventional method for knowledge acquisition. In contrast, indicator 7 or "Standardized tests do not fully reflect students' critical thinking or problem-solving abilities." has the lowest mean score (2.98; *Perceived*). This implies that while teachers value standardized assessments, limitations in measuring higher order thinking skills and conceptual understanding emerge.

This contrast between teachers' strong adherence to traditional practices and emerging recognition of their limitations reveals a critical tension between existing classroom beliefs and the progressive ideals of the MATATAG curriculum. The curriculum advocates for a shift away from rigid, teacher-centered instruction toward contextualized, inquiry-based learning, yet the findings suggest that such a transition is not yet fully realized at the implementation level. Teachers appear to selectively apply positivist methods, favoring those that yield measurable results in fluency and accuracy, while remaining hesitant or constrained in adopting more student-centered alternatives (Nilson, 2016).

This situation is consistent with findings from Brabham *et al.* (2016), who observed that teachers often favor structured instructional approaches in professional development due to their perceived clarity and effectiveness. Likewise, Maphosa and Wadesango (2022) emphasize that comfort, familiarity, and systemic expectations contribute to the sustained use of teacher-centered methods, which can pose challenges when educational reforms demand instructional transformation.

The implication for future pedagogical shifts under the MATATAG framework is clear: reform efforts must account for the entrenched beliefs and practices of educators. Professional development programs must not only introduce new strategies but also support belief change and practical integration. A hybrid model that respects the strengths of positivist methods while scaffolding the adoption of constructivist approaches may offer a more realistic and sustainable path forward. As Brabham *et al.* (2016) recommend, professional development

should be ongoing, collaborative, and embedded in classroom realities, combining instructional coaching with reflective communities to bridge the divide between policy intentions and classroom implementation.

Section 2: implementation of positivism in elementary mathematics

Table 2. Extent of implementation of positivist principles in teachers teaching methodologies and classroom practices

Indicators	Mean	SD	Interpretations
Structured teaching strategies were used that reflect positivist principles, such as clear, direct explanation followed by repeated practice.	3.67	0.476	Highly Implemented
Drill exercises are regularly used in class, especially for topics like operations involving fractions and integers.	3.63	0.555	Highly Implemented
Each lesson begun by modeling the steps to solve specific problems, ensuring students follow a consistent method.	3.61	0.526	Highly Implemented
Memorization of multiplication tables, formulas, and basic procedures is emphasized to promote speed and fluency.	3.60	0.495	Highly Implemented
In assessments, Objective formats like multiple-choice or computation-based items that have clear right or wrong answers are preferred.	3.46	0.503	Highly Implemented
Students are required to follow the exact formula when solving math problems, discouraging deviation from the taught method.	3.37	0.672	Highly Implemented
Frequent assessments—quizzes, seatworks, and tests—to measure mastery of specific content and procedures.	3.63	0.555	Highly Implemented
Teacher acts as a source of knowledge in the classroom, guiding learning through explicit and corrective instruction.	3.65	0.481	Highly Implemented
When students make errors, the teacher immediately correct them and explain the mistake to reinforce the correct process.	3.65	0.481	Highly Implemented
Diagnostic assessments was used at the start to determine knowledge gaps, followed by structured remediation sessions.	3.65	0.481	Highly Implemented
Rote memorization is integrated in lessons, particularly for foundational concepts such as geometric formulas and rules.	3.49	0.630	Highly Implemented
Learning outcomes in lessons are always measurable, often focused on procedural accuracy and mastery.	3.58	0.533	Highly Implemented
Performance was prioritized based on standardized assessment scores as indicators of learning success.	3.56	0.501	Highly Implemented
Direct instruction is a main strategy for introducing new mathematical concepts before any form of application.	3.56	0.535	Highly Implemented
Lessons were designed where success is measured through objective standards and correctness of final answers.	3.56	0.598	Highly Implemented
Most of math lessons were begun with teacher-led explanations followed by student practice.	3.63	0.522	Highly Implemented
Frequently assessed students through quizzes and tests that focus on correct answers and procedures.	3.61	0.526	Highly Implemented
Emphasized precision and accuracy in solving math problems, even over multiple strategies.	3.51	0.571	Highly Implemented
Students are required often to follow fixed solution formats or formulas for consistency	3.46	0.629	Highly Implemented
Math teaching practices emphasize content delivery over open-ended exploration or student-led inquiry.	3.54	0.569	Highly Implemented
Overall Mean	**3.57**	**0.546**	**Highly Implemented**

Note: 1.00-1.75 Not Implemented; 1.76-2.50 Slightly Implemented; 2.51-3.25 Implemented; 3.26-4.00 Highly Implemented

Table 2 presents the extent to which elementary mathematics teachers implement positivist principles in their teaching methodologies and classroom practices. The results reveal an overall mean of 3.57 with a standard deviation of 0.546, interpreted as "Highly Implemented." This finding indicates that, despite the ongoing implementation of the learner-centered MATATAG Curriculum, positivist strategies remain deeply embedded in day-to-day instruction. These strategies include direct teaching, rote memorization, procedural reinforcement, and reliance on objective assessments, suggesting that classroom practice continues to be dominated by structured, teacher-centered models. This observation mirrors the findings of Domingo and Masabpi (2024), who also noted the prevalence of positivist approaches in classrooms that are theoretically undergoing progressive reform.

The highest mean score (3.67) was observed for the item: "Structured teaching strategies were used that reflect positivist principles, such as clear, direct explanation followed by repeated practice." This result confirms that explicit instruction and repetitive drilling are strongly favored, reflecting teachers' belief that mastery in mathematics—particularly in computation and procedural accuracy—is best achieved through clear modeling and repeated exposure (Boylan *et al.*, 2018). This strong adherence to routine and structure contrasts with the expectations of the MATATAG curriculum, which encourages flexible, student-driven learning and promotes understanding over memorization.

Interestingly, the lowest mean score (3.37)—still categorized as "Highly Implemented"—was recorded for the item: "Required students to follow the exact formula when solving math problems, discouraging deviation from the taught method." This suggests a slightly more flexible stance among some educators, possibly allowing students to explore alternative solution strategies or explain reasoning in diverse ways. Although limited, this shift could be interpreted as a subtle alignment with constructivist principles, which MATATAG aims to cultivate (Hung, 2019). However, the relatively small difference in mean scores implies that such flexibility remains the exception rather than the norm.

The contrast between the intended curriculum shift and the actual persistence of traditional teaching methods reflects a critical implementation gap. While MATATAG encourages conceptual exploration, inquiry, and student agency, teachers appear to prioritize structure, efficiency, and control—likely due to long-standing beliefs about effective instruction. As supported by Shewangizaw (2024) and Olofson & Garnett (2018), teachers may appreciate progressive ideals in theory but default to traditional models due to familiarity, perceived success in producing measurable outcomes, and limited experience with learner-centered tools.

Further complicating this shift is the lack of sufficient training in constructivist methodologies, a reality that Ross *et al.* (2020) describe as a barrier to reform. Many teachers feel ill-equipped to manage open-ended, exploratory instruction, especially in large or resource-constrained classrooms. The MATATAG curriculum, though well-intentioned, may fall short in its implementation unless these contextual challenges are addressed.

The implication is clear, professional development programs must go beyond technique and strategy—they must address the philosophical underpinnings of teaching. As Ajani (2023) emphasizes, effective change requires belief-shifting experiences, ongoing mentorship, and embedded practice. Future pedagogical shifts under MATATAG will need to adopt blended models that respect teachers' reliance on structure while gradually building their confidence and capacity to adopt inquiry-based, learner-centered approaches. This dual emphasis may be the key to achieving practical alignment between curriculum policy and classroom realities.

Section 3. Relationship between educators' perception of positivism and their actual classroom implementation in elementary mathematics education

Table 3. Kendall Tau Correlation between educators' perception of positivism and their actual classroom implementation in elementary mathematics education

GROUPS		Kendall Tau Correlation	N	Sig. (2-tailed)
Educators' Perception of Positivism	Implementation in Elementary Mathematics Education	.457**	57	.000

***. Correlation is significant at the 0.01 level (2-tailed).*

Table 3 presents the Kendall Tau correlation analysis between educators' perception of positivism and their actual classroom implementation of positivist principles in elementary mathematics education. The results show a moderate positive correlation coefficient of 0.457, which is statistically significant at p = .000. This indicates a significant and moderately strong relationship between what teachers believe about positivist methods and how they apply those beliefs in practice. Simply put, the more positively educators view positivist strategies, such as direct instruction, memorization, and standardization, the more likely they are to consistently implement these in their daily teaching routines.

This finding highlights a crucial contrast between the intended learner-centered focus of the MATATAG curriculum and the actual beliefs driving instructional behavior. While the curriculum advocates for inquiry-based, student-driven learning, the moderate strength of the correlation suggests that philosophical alignment with positivism continues to guide teachers' classroom decisions. This underscores the idea that belief systems are not peripheral but central to pedagogy, particularly in a subject like mathematics, where structure, precision, and procedural mastery are often emphasized and valued.The data affirms the claim made by Kasa *et al.* (2024) that teachers with transmission-oriented beliefs tend to favor

teacher-centered practices, while those who adopt discovery-oriented perspectives lean toward constructivist strategies. The study confirms that, in San Mateo South District, positivist-aligned beliefs—such as viewing knowledge as fixed, measurable, and best taught through repetition—are not only common but operationalized through daily instructional methods, reflecting what Lamichhane (2017) describes as absolutist mathematical thinking. These teaching behaviors include a high reliance on direct instruction, formulaic processes, and emphasis on getting correct answers over exploring concepts.

However, this finding diverges from the philosophical underpinning of the MATATAG curriculum, which promotes holistic development, contextualized understanding, and active learning. From a reform perspective, the expectation is that instructional practices will gradually align with constructivist principles—but this correlation suggests otherwise. The persistence of positivist implementation implies that beliefs may be stronger influencers than policy mandates, especially when those beliefs are deeply rooted in educators' professional identities and past training.

Still, there is an opportunity for change, as noted by Spillane *et al.* (2017). While beliefs about the nature of mathematics tend to be deeply held and resistant to change, pedagogical beliefs are more flexible—particularly when supported by peer collaboration, institutional encouragement, and reflective practice. This insight is key for future implementation efforts. Rather than merely introducing constructivist strategies, educational leaders must intentionally target belief systems through sustained, collaborative professional development.

For the MATATAG curriculum to take hold at the classroom level, reform must address not only what teachers do, but what they believe. The correlation data makes it clear that teachers do not implement strategies they do not believe in. Thus, systemic interventions must go beyond technical training—they must foster philosophical inquiry, offer practical modeling of blended methods, and provide opportunities for teachers to reconcile their values with progressive instructional goals. Only then can pedagogically shifts under MATATAG be both meaningful and sustainable.

5. CONCLUSION

Based on the findings derived from the data, the following conclusions were drawn to address the specific objectives and main problem of the study:

i. Educators in San Mateo South District strongly perceived positivism as a guiding framework in elementary mathematics education which reflect a consistent belief in the value of structure, procedural and objective teaching strategies such as rote memorization and standardized testing as essential components of effective mathematics teachings;

ii. Positivist Principles are highly implemented in the teaching methodologies and classroom practices of elementary mathematics educators such as direct instructions, performance- based assessments and drill exercises even in the recent curriculum reforms; and

iii. The study establishes a moderate and statistically significant positive relationship between educators' perception towards positivism and their actual classroom implementation where their beliefs have a direct influence on their teaching.

While the study offers valuable insights, it is important to acknowledge its limitations. The research was geographically limited to the San Mateo South District, which may not fully represent the perspectives and instructional practices of educators in other regions of the Philippines. Additionally, the reliance on self-reported survey responses may introduce potential response bias, as participants might present socially desirable or idealized views of their teaching practices. Future research should consider expanding the scope to include multiple districts or regions to enhance generalizability. Longitudinal or mixed-method studies may also help capture changes in belief systems over time and provide deeper insights into how policy reforms like MATATAG are translated into instructional practice at a broader scale.

RECOMMENDATIONS

Derived from the conclusion of the study the following recommendations were recommended:

i. Department of Education (DepEd) and school administrators must design professional development activities that help educators critically examine the role of positivist philosophies in the classroom than can be facilitated during their school collaborative expertise sessions (CES);

ii. Encourage educators to still use of the basic, traditional strategy like Positivism in teaching elementary mathematics with compromising or disregarding learner- centered approach of the MATATAG Classroom;

iii. Provide training programs that promote the gradual integration of positivist principle in a MATATAG classroom; and

iv. Future researchers can include other teaching philosophy that still being utilized in a MATATAG classrooms.

REFERENCES

Acharya, U. (2023). Mathematics Teachers' Perception Towards Educational Technology Integration: Mahendra Ratna Campus Tahachal. *Pragyaratna प्रज्ञारत्न, 5*(1), 174-182.

Agbata, B. C., Obeng-Denteh, W., Kwabi, P. A., Abraham, S., Okpako, S. O., Arivi, S. S., ... & Adu, G. W. (2024). Everyday uses of mathematics and the roles of a mathematics teacher. *Science World Journal, 19*(3), 819-827.

Ajani, O. A. (2023). Exploring the alignment of professional development and classroom practices in African contexts: A discursive investigation. *Journal of Integrated Elementary Education, 3*(2), 120-136.

Alakwe, K. O. (2017). Positivism and Knowledge Inquiry: From Scientific Method to Media and Communication Researc. *Specialty Journal of Humanities and Cultural Science, 2*(3-2017), 38-46.

Ansya, Y. A. U., Alfianita, A., & Syahkira, H. P. (2024). Optimizing Mathematics Learning in Fifth Grades: the Critical Role of Evaluation In Improving Student Achievement and Character. *Progres Pendidikan, 5*(3), 302-311.

Atasoy, E., Yangin, S., & Tolu, H. (2018). Relationship between

Math Teachers' Instructional Styles and Their Educational Philosophical Backgrounds. *Journal of Education and Training Studies, 6*(10), 54-68.

Bhalla, P. (2024). *Textbook Culture: Pedagogy and Classroom Processes*. Taylor & Francis.

Boylan, M., Maxwell, B., Wolstenholme, C., Jay, T., & Demack, S. (2018). The mathematics teacher exchange and 'mastery'in England: The evidence for the efficacy of component practices. *Education sciences, 8*(4), 202.

Brabham, B. C., Nichols, J., & Rupley, W. H. (2016). Teachers' perceptions and implementation of professional development in writing instruction. *Journal of Studies in Education, 6*(3), 32–45. https://doi.org/10.5296/jse.v6i3.9620

DepEd Order no., 10 s. (2024). Policy Guideline on the Implementation of MATATAG Curriculum.

Domingo, S., & Masabpi, A. (2024). MATATAG Agenda: Analyzing school heads' and teachers' perspectives in Lambayong Dis-trict 1. *Ignatian International Journal for Multidisciplinary Research, 2*(6), 2071-2080.

Ghaleb, B. D. S. (2024). Effect of exam-focused and teacher-centered education systems on students' cognitive and psychological competencies. *International Journal of Multidisciplinary Approach Research and Science, 2*(2), 611-631.

Huang, R. (2019). *Educational technology a primer for the 21st century*. Springer Nature Singapore Pte Ltd.

Kasa, Y., Areaya, S., & Woldemichael, M. (2024). Relationship between university teachers' beliefs about teaching mathematics and their instructional practices. *Cogent Education, 11*(1), 2335838.

Khanday, S. A., Vali, K. M., Junaid, M., & Ahmad, M. (2024). Understanding Positivism: A Qualitative Exploration of Its Principles and Relevance Today. *European Journal of Applied Sciences, 12*(6).

Kilag, O. K., Andrin, G., Abellanosa, C., Villaver Jr, M., Uy, F., & Sasan, J. M. (2024). MATATAG Curriculum Rollout: Understanding Challenges for Effective Implementation. *International Multidisciplinary Journal of Research for Innovation, Sustainability, and Excellence, 1*(5), 172-177.

Kilag, O. K., Sasan, J. M., Maguate, G., Odango, J., Cruz, J. N. D., & Fulgencio, R. (2024). Curriculum Innovation in Philippine Education: The MATATAG Curriculum. *International Multidisciplinary Journal of Research for Innovation, Sustainability, and Excellence, 1*(6), 727-732.

Kritt, D., & Budwig, N. (2022). The future of constructivist education. *Human Development, 66*(4-5), 295-309.

Lamichhane, B. R. (2017). Teachers' beliefs about mathematics and instructional practices. *Saptagandaki Journal, 8*, 14-22.

Li, Y., & Schoenfeld, A. H. (2019). Problematizing teaching and learning mathematics as "given" in STEM education. *International Journal of STEM Education, 6*(1), 1-13. https://doi.org/10.1186/S40594-019-0197-9.

Lo, N. P. K. (2024). From theory to practice: unveiling the synergistic potential of design and maker education in advancing learning. *SN Computer Science, 5*(4), 360.

Maguate, G. (2024). *Cultural Responsiveness and Educational Equity: Exploring the MATATAG Curriculum in the Light of Sociocultural Theory*.

Maphosa, C., & Wadesango, N. (2022). Exploring perceived barriers to effective utilization of learner-centred teaching methods. *BMC Medical Education, 22*, 1–10. https://doi.org/10.1186/s12909-022-03456-4

Mapolelo, D. C., & Akinsola, M. K. (2015). Preparation Of Mathematics Teachers: Lessons From Review Of Literature On Teachers' knowledge, Beliefs, And Teacher Education. *International Journal of Educational Studies, 2*(1), 01-12.

Mariamah, M., Ratnah, R., Katimah, H., Rahman, A., & Haris, A. (2021, June). Analysis of students' perceptions of mathematics subjects: Case studies in Elementary Schools. In *Journal of Physics: Conference Series* (Vol. 1933, No. 1, p. 012074). IOP Publishing.

Nilson, L. B. (2016). *Teaching at its best: A research-based resource for college instructors*. John Wiley & Sons.

Olofson, M. W., & Garnett, B. R. (2018). Measuring the impact of professional development for student-centred pedagogies: a mixed-methods study. *Professional Development in Education, 44*, 342-355.

Raj, A. V. (n.d.) *Analysis of School Practices from a Positivistic Perspective*.

Ross, L., Krause, S. J., Judson, E., Mayled, L. H., Culbertson, R. J., Hjelmstad, K. L., ... & Glassmeyer, K. (2020, June). Review and Assessment of an Evidence-Based Professional Development Program to Promote Active-Learning Pedagogical Practices in the Classroom. In *2020 ASEE Virtual Annual Conference Content Access*.

Shewangizaw, G. (2024). An Exploration of Ethiopian Technical and Vocational Training Institute English Teachers' Views and Classroom Application of Student-Centered Learning Principles. *RATE Issues, 32*(2).

Spillane, J. P., Hopkins, M., & Sweet, T. M. (2017). School District Educational Infrastructure and Change at Scale: Teacher Peer Interactions and Their Beliefs About Mathematics Instruction. *American Educational Research Journal, 55*(3), 532-571. https://doi.org/10.3102/0002831217743928

William, F. K. A. (2024). Delving into the principles and application of positivism in research: A guide for scholars. *International Journal of Research Publications, 146*(1), 7-13.