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Article

Instructional Practices in Teaching Science 7 under the MATATAG Curriculum: Experiences of Public Secondary School Science Teachers in Dupax del Norte I District, Schools Division of Nueva Vizcaya

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Abstract

The implementation of the MATATAG Curriculum in the Philippines has introduced substantial reforms in Science education by emphasizing foundational competencies, contextualized instruction, inquiry-based learning, and learner-centered pedagogies. As one of the first groups to implement the revised curriculum, Science 7 teachers play a critical role in translating curriculum intentions into meaningful classroom practices. This study explored the instructional practices of public secondary school Science teachers in implementing the MATATAG Curriculum in Dupax del Norte I District, Schools Division of Nueva Vizcaya. Employing a qualitative phenomenological research design, the study sought to understand the lived experiences of Science 7 teachers as they navigated curriculum implementation. Purposive sampling was utilized to select participants who had direct experience teaching Science 7 under the MATATAG Curriculum. Data were gathered through semi-structured interviews, classroom observations, and document analysis and were analyzed using Braun and Clarke's (2021) thematic analysis. Five major themes emerged: (1) contextualizing scientific concepts through learners' lived experiences; (2) adopting inquiry-based and learner-centered instructional strategies; (3) adapting instructional resources amid limited learning materials; (4) strengthening formative assessment and feedback mechanisms; and (5) fostering teacher adaptability through collaborative professional learning. The findings revealed that Science teachers continuously modified their instructional approaches to respond to learners' diverse needs while remaining aligned with the competencies prescribed by the MATATAG Curriculum. Despite challenges related to instructional resources, time allocation, and curriculum transition, teachers demonstrated resilience, creativity, and professional commitment in delivering quality Science instruction. The study highlights the importance of sustained professional development, collaborative learning communities, institutional support, and resource enhancement in strengthening Science instruction under the MATATAG Curriculum. The findings provide valuable implications for curriculum developers, school administrators, policymakers, and teacher educators in supporting effective curriculum implementation and improving Science education in Philippine public secondary schools.

Keywords: MATATAG Curriculum; Science education; Science 7; instructional practices; qualitative research; phenomenology; inquiry-based learning; teacher experiences; curriculum implementation

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Introduction

Science education serves as one of the fundamental pillars in preparing learners to become scientifically literate individuals capable of making informed decisions in an increasingly complex and technology-driven society. In the Philippines, Science education has continuously undergone curricular reforms to respond to emerging global challenges, rapid scientific advancement, and the evolving needs of twenty-first-century learners. These reforms recognize that Science instruction should extend beyond the acquisition of factual knowledge and instead cultivate critical thinking, scientific inquiry, problem-solving abilities, environmental stewardship, and responsible citizenship (Department of Education [DepEd], 2023).

In response to persistent learning gaps and curriculum congestion identified under the K to 12 Basic Education Curriculum, the Department of Education introduced the MATATAG Curriculum, formally known as the revised K to 10 curriculum. The MATATAG Curriculum emphasizes the decongestion of learning competencies, prioritization of foundational skills, contextualized instruction, learner-centered pedagogies, and meaningful assessment practices. Rather than requiring teachers to cover numerous competencies within limited instructional time, the revised curriculum encourages deeper understanding of essential concepts through inquiry, experiential learning, and authentic classroom experiences (DepEd, 2023).

The successful implementation of the MATATAG Curriculum largely depends on teachers, who serve as the primary curriculum implementers. Teachers are expected to redesign lesson delivery, utilize innovative instructional strategies, integrate locally relevant learning experiences, and facilitate active learner participation. Science teachers, in particular, are challenged to transform abstract scientific concepts into meaningful learning experiences that encourage curiosity, experimentation, collaboration, and scientific reasoning. These expectations require teachers to continuously adapt their instructional practices while responding to learners' diverse backgrounds, available school resources, and contextual realities (Darling-Hammond et al., 2020).

Instructional practices encompass the deliberate pedagogical decisions, classroom strategies, learning activities, assessment approaches, and classroom management techniques employed by teachers to facilitate meaningful learning. Contemporary Science education advocates inquiry-based learning, problem-based instruction, collaborative learning, differentiated instruction, contextualization, and authentic assessment as effective pedagogical approaches that promote higher-order thinking and scientific literacy (National Research Council, 2012). However, implementing these instructional approaches within a newly introduced curriculum often presents significant challenges for teachers, particularly during the transition period.

Previous studies have demonstrated that curriculum reforms frequently require substantial teacher adaptation. Teachers often experience uncertainties related to curriculum interpretation, instructional planning, assessment alignment, availability of instructional resources, and professional preparedness. Successful curriculum implementation therefore requires not only curriculum documents but also sustained professional development, institutional support, collaborative learning communities, and continuous instructional reflection (Fullan, 2020).

Understanding how teachers navigate these transitions provides valuable insights into strengthening curriculum implementation and improving educational quality.

Within the Philippine educational context, limited qualitative studies have specifically examined Science teachers' instructional practices under the newly implemented MATATAG Curriculum. Existing investigations primarily focus on curriculum policies, learner performance, or teacher readiness, leaving a significant gap in understanding the lived instructional experiences of Science teachers during curriculum transition. Exploring teachers' experiences is particularly important because instructional decisions directly influence learner engagement, conceptual understanding, scientific inquiry, and classroom effectiveness.

Moreover, the rural context of public secondary schools presents unique opportunities and challenges in implementing Science instruction. Schools often differ in terms of laboratory facilities, instructional materials, technological resources, learner diversity, and community contexts. Teachers frequently demonstrate creativity and adaptability by utilizing locally available materials, contextualized examples, and collaborative learning strategies to address resource limitations while maintaining instructional quality. These experiences provide valuable lessons that may inform future curriculum implementation across similar educational settings.

Grounded in the constructivist view of learning, this study recognizes that meaningful Science learning occurs when learners actively construct scientific knowledge through inquiry, exploration, experimentation, collaboration, and reflection. Consequently, teachers' instructional practices become essential mechanisms through which curriculum intentions are translated into authentic classroom experiences. Examining these practices offers deeper understanding of how teachers operationalize curriculum reforms while responding to contextual demands and learner needs.

Against this backdrop, this study explored the instructional practices employed by Science 7 teachers implementing the MATATAG Curriculum in public secondary schools within Dupax del Norte I District, Schools Division of Nueva Vizcaya. Specifically, it sought to understand teachers' experiences in designing instruction, facilitating inquiry-based learning, contextualizing Science concepts, assessing learner understanding, addressing implementation challenges, and adapting instructional strategies within the context of the MATATAG Curriculum. The findings are expected to contribute to the growing body of literature on Science curriculum implementation and provide empirical evidence for strengthening teacher professional development, instructional support systems, and future curriculum innovations.

Review of Related Literature

The MATATAG Curriculum and Science Education

The MATATAG Curriculum was developed to address persistent concerns regarding curriculum congestion, fragmented learning competencies, and declining learner achievement in basic education. According to the Department of Education (2023), the revised curriculum emphasizes mastery of foundational competencies, contextualized learning experiences, interdisciplinary integration, and learner-centered instruction. Science education under the MATATAG Curriculum encourages learners to investigate authentic scientific problems, apply scientific

concepts to real-life situations, and develop critical thinking, inquiry skills, and environmental responsibility.

Internationally, curriculum reforms have increasingly shifted toward competency-based education, emphasizing deeper conceptual understanding rather than content coverage (OECD, 2021). Inquiry-based learning, contextualization, collaborative learning, and authentic assessment have become central components of contemporary Science instruction because these approaches encourage learners to actively construct knowledge through meaningful experiences (National Research Council, 2012).

Instructional Practices in Science Education

Effective Science instruction requires instructional approaches that actively engage learners in scientific investigation and critical thinking. Inquiry-based instruction enables students to formulate questions, conduct investigations, analyze evidence, and communicate scientific explanations (Bybee, 2013). Research has consistently shown that inquiry-based learning improves conceptual understanding, scientific reasoning, and learner motivation.

Contextualized instruction likewise enhances Science learning by connecting scientific concepts to learners' everyday experiences, local environments, and community issues. Contextualization promotes meaningful learning because students are more likely to understand abstract concepts when these are related to familiar situations (Gilbert, 2006).

Differentiated instruction has also emerged as an essential pedagogical approach in Science education due to increasing learner diversity. Tomlinson (2017) emphasized that effective differentiation requires teachers to modify instructional content, learning processes, assessment methods, and classroom activities according to learners' readiness, interests, and learning profiles.

Theoretical Framework

This study is anchored on Constructivist Learning Theory proposed by Lev Vygotsky (1978) and enriched by Jerome Bruner's Constructivist Theory (1966).

Vygotsky posited that learning is socially constructed through interaction, collaboration, and guided participation. Knowledge develops as learners engage with teachers, peers, and authentic learning experiences within their Zone of Proximal Development (ZPD). In Science education, this perspective supports inquiry-based instruction, collaborative experimentation, questioning, and classroom discourse.

Bruner further argued that learners actively construct knowledge through discovery and exploration. His theory emphasizes spiral learning, scaffolding, and inquiry, all of which are reflected in the instructional principles promoted by the MATATAG Curriculum. Teachers facilitate learning by designing experiences that encourage learners to investigate scientific phenomena, formulate explanations, and connect new concepts with prior knowledge.

Together, these theories provide a strong foundation for understanding how Science teachers design instructional practices that promote meaningful, learner-centered, and inquiry-driven Science learning under the MATATAG Curriculum.

Conceptual Framework

This study is guided by the premise that **Science teachers' instructional practices** influence the successful implementation of the **MATATAG Curriculum**. Teachers employ various pedagogical approaches including inquiry-based learning, contextualization, differentiated instruction, formative assessment, and collaborative learning—to achieve the intended learning competencies. Their instructional experiences are shaped by available resources, professional competencies, institutional support, learner characteristics, and classroom contexts. These experiences subsequently influence learner engagement, conceptual understanding, scientific inquiry skills, and overall curriculum implementation.

Research Questions

This study sought to explore the instructional practices of Science 7 teachers implementing the MATATAG Curriculum in public secondary schools of Dupax del Norte I District, Schools Division of Nueva Vizcaya. Specifically, it sought to answer the following questions:

1. How do Science 7 teachers describe their instructional practices in implementing the MATATAG Curriculum?
2. How do teachers contextualize Science concepts to enhance learners' understanding?
3. What learner-centered and inquiry-based instructional strategies do teachers employ in Science 7 classrooms?
4. What challenges do teachers encounter in implementing the MATATAG Curriculum?
5. How do teachers adapt their instructional practices to address implementation challenges?
6. What insights may be derived to strengthen Science instruction under the MATATAG Curriculum?

Methodology

Research Design

This study employed a qualitative phenomenological research design to explore the instructional practices and lived experiences of Science 7 teachers implementing the MATATAG Curriculum in public secondary schools of Dupax del Norte I District, Schools Division of Nueva Vizcaya. Phenomenology was appropriate because it sought to understand how teachers experienced curriculum implementation, instructional adaptation, and classroom practices within their teaching contexts (Creswell & Poth, 2018).

Research Locale

The study was conducted in the public secondary schools of Dupax del Norte I District, Schools Division of Nueva Vizcaya. The district comprises schools implementing the MATATAG Curriculum and serves learners from diverse socioeconomic and geographical backgrounds, making it an appropriate setting for examining Science teachers' instructional experiences.

Research Participants

The participants were Science 7 teachers currently implementing the MATATAG Curriculum. Using purposive sampling, teachers with direct experience in teaching Science 7 under the revised curriculum were selected. Participant recruitment continued until data saturation was achieved.

Research Instrument

Data were collected using a researcher-developed semi-structured interview guide, validated by experts in Science Education and Qualitative Research. Classroom observations and document analysis of lesson plans and instructional materials were also conducted to triangulate the interview data.

Data Gathering Procedure

Permission to conduct the study was secured from the Schools Division Office, school principals, and participating teachers. After obtaining informed consent, individual semi-structured interviews lasting approximately 45–60 minutes were conducted and audio-recorded. Classroom observations and document analysis were subsequently undertaken to validate participants' responses. All interviews were transcribed verbatim and subjected to member checking to ensure accuracy.

Data Analysis

The data were analyzed using Braun and Clarke's (2021) thematic analysis, following six phases: familiarization, coding, theme generation, theme review, theme definition, and report writing. Emerging themes were supported by participants' verbatim responses and relevant literature.

Trustworthiness of the Study

Trustworthiness was established using Lincoln and Guba's (1985) criteria of credibility, transferability, dependability, and confirmability. Member checking, triangulation, peer debriefing, and an audit trail were employed to ensure the credibility and rigor of the findings.

Ethical Considerations

Ethical approval and institutional permission were obtained before data collection. Participation was voluntary, and informed consent was secured from all participants. Confidentiality and anonymity were maintained through the use of pseudonyms, and all research data were used solely for academic purposes. Participants were informed of their right to withdraw from the study at any time without penalty.

Findings and Discussion

The thematic analysis of the participants' narratives generated **five major themes** that describe the instructional practices of Science 7 teachers implementing the MATATAG Curriculum in public secondary schools of Dupax del Norte I District, Schools Division of Nueva Vizcaya. This section presents the first two emergent themes supported by participants' verbatim responses and related literature.

Theme 1: Contextualizing Science Concepts through Learners' Everyday Experiences

One of the most prominent instructional practices employed by the participants was **contextualizing Science lessons using learners' daily experiences and local community resources**. Teachers emphasized that the MATATAG Curriculum encourages the integration of familiar situations, indigenous knowledge, and community-based examples to make scientific concepts more meaningful and easier for learners to understand.

Most participants explained that learners demonstrate greater engagement when scientific principles are connected to situations they commonly encounter at home, in school, and within their communities.

One participant shared:

"Mas madaling maintindihan ng mga bata ang Science kapag iniuugnay namin ito sa kanilang pang-araw-araw na buhay. Kapag pinag-uusapan ang ecosystem, ginagamit namin ang ilog, bukirin, at kagubatan dito sa aming barangay bilang halimbawa." (Participant 3)

Another participant explained:

"Kapag tungkol sa weather at climate ang lesson, pinapagamit ko ang mga karanasan nila tuwing bagyo o tag-init. Mas aktibo silang sumasagot dahil nararanasan nila mismo ang mga ito." (Participant 7)

Teachers likewise utilized locally available materials during classroom demonstrations.

One participant remarked:

"Hindi man kumpleto ang laboratory equipment, gumagamit kami ng mga materyales na makikita sa paligid tulad ng bote, lupa, dahon, tubig, at iba pang lokal na kagamitan." (Participant 5)

These narratives demonstrate that contextualization enhances learners' conceptual understanding by bridging classroom instruction with authentic experiences. Teachers viewed contextualization as an effective strategy for promoting learner participation and improving scientific literacy despite limited instructional resources.

The findings support **Vygotsky's Constructivist Theory**, which emphasizes that learning becomes more meaningful when learners actively construct knowledge through social interaction and authentic experiences (Vygotsky, 1978). Similarly, Gilbert (2006) argued that contextualized Science instruction enables learners to better appreciate scientific concepts by connecting them with real-world situations. The MATATAG Curriculum likewise promotes contextualization to ensure that Science learning remains relevant, meaningful, and responsive to learners' local environments (DepEd, 2023).

Theme 2: Utilizing Inquiry-Based and Learner-Centered Instructional Strategies

Another dominant instructional practice that emerged from the data was the consistent use of inquiry-based and learner-centered teaching strategies. Participants described how they shifted from traditional lecture-based instruction to learning experiences that encourage questioning, investigation, collaboration, and problem-solving.

Teachers explained that instead of providing immediate answers, they encourage learners to formulate hypotheses, conduct simple investigations, and draw conclusions based on evidence.

One participant stated:

"Mas gusto kong tanungin muna sila bago ako magpaliwanag. Pinag-iisip ko muna sila kung bakit nangyayari ang isang phenomenon bago namin talakayin ang konsepto." (Participant 1)

Another teacher shared:

"Mas marami na ngayong group activities, investigations, at laboratory simulations. Ang role namin ay facilitator na lamang habang ang mga bata ang aktibong nagdi-discover." (Participant 9)

Participants also emphasized collaborative learning as an essential component of Science instruction.

As one teacher explained:

"Kapag magkakasama silang nagsosolve ng problema at nag-eeksperimento, mas natututo sila. Nagkakaroon sila ng confidence na magbigay ng sariling paliwanag." (Participant 6)

Teachers observed that learner-centered instruction improved classroom participation, communication skills, critical thinking, and scientific reasoning.

The findings affirm Bruner's Constructivist Theory, which posits that learners develop deeper understanding when they actively discover knowledge rather than passively receiving information (Bruner, 1966). Likewise, the National Research Council (2012) emphasized that inquiry-based instruction strengthens scientific reasoning by engaging learners in authentic investigations. Bybee (2013) further argued that inquiry-oriented Science instruction develops higher-order thinking, conceptual understanding, and problem-solving skills, all of which are emphasized under the MATATAG Curriculum.

Overall, the findings indicate that Science teachers have embraced learner-centered pedagogies consistent with the goals of the MATATAG Curriculum. Through contextualization and inquiry-based instruction, teachers create meaningful learning experiences that enable learners to connect scientific knowledge with real-life situations while developing essential twenty-first-century competencies.

Theme 3: Adapting Instructional Resources Amid Limited Learning Materials

The participants consistently described resourcefulness and instructional adaptation as essential practices in implementing the MATATAG Curriculum. While teachers appreciated the curriculum's emphasis on competency-based instruction, they acknowledged that the limited availability of instructional materials, laboratory equipment, and learning resources required them to modify their teaching approaches.

One participant shared:

"Hindi pa kumpleto ang learning materials para sa MATATAG Curriculum kaya gumagawa kami ng sarili naming activity sheets at PowerPoint presentations." (Participant 4)

Another teacher explained:

"Marami kaming improvised materials. Kapag walang laboratory apparatus, gumagamit kami ng mga available na materyales sa paligid para maipakita pa rin ang konsepto." (Participant 8)

Some teachers also utilized digital technologies to supplement classroom instruction.

One participant stated:

"Kapag may internet connection, gumagamit ako ng simulation videos at educational websites para mas maintindihan ng mga estudyante ang lesson." (Participant 10)

Despite resource limitations, participants demonstrated creativity by designing localized learning materials, modifying laboratory activities, and integrating digital resources into classroom instruction. These adaptive practices enabled teachers to maintain learner engagement while ensuring that the intended learning competencies were achieved.

The findings support the work of Darling-Hammond et al. (2020), who emphasized that effective teachers continuously adapt instructional resources to respond to diverse learning environments. Similarly, DepEd (2023) encourages contextualized and flexible instructional resource development under the MATATAG Curriculum to ensure meaningful and inclusive Science learning.

Theme 4: Strengthening Formative Assessment and Continuous Feedback

Another major instructional practice that emerged was the increased use of **formative assessment** to monitor learners' understanding and guide instructional decisions. Rather than relying solely on traditional paper-and-pencil examinations, teachers employed various classroom assessment strategies to provide immediate feedback and identify learners' misconceptions.

One participant explained:

"Hindi lang pagsusulit ang ginagamit namin. Mas madalas ang observation, questioning, performance tasks, at group presentations para makita ang learning ng mga bata." (Participant 2)

Another participant shared:

"Kapag may hindi agad naintindihan ang mga estudyante, binibigyan ko sila ng additional activities bago kami lumipat sa susunod na competency." (Participant 6)

Teachers emphasized that continuous assessment enabled them to adjust instructional pacing according to learners' needs.

As one participant remarked:

"Mas mahalaga ngayon ang feedback kaysa grades. Doon namin nalalaman kung ano pa ang dapat ulitin o palalimin." (Participant 1)

Participants viewed formative assessment as an essential component of learner-centered instruction because it supports individualized learning, improves learner confidence, and provides opportunities for immediate instructional intervention.

These findings align with Black and Wiliam (2009), who argued that formative assessment significantly improves student achievement by providing timely feedback that guides both teaching and learning. Likewise, the MATATAG Curriculum emphasizes assessment for learning as a mechanism for developing mastery of essential competencies (DepEd, 2023).

Theme 5: Fostering Teacher Adaptability through Collaborative Professional Learning

The final theme highlights the importance of professional collaboration and continuous learning in supporting curriculum implementation. Participants consistently acknowledged that implementing the MATATAG Curriculum required them to update their pedagogical knowledge, share instructional practices, and collaborate with fellow teachers.

One participant stated:

"*Malaking tulong ang Learning Action Cell (LAC) sessions dahil doon kami nagpapalitan ng strategies at instructional materials.*" (Participant 5)

Another participant shared:

"*Kapag may bagong competency na mahirap ituro, nagtutulungan kami ng mga kapwa Science teachers kung paano ito mas mapapadali para sa mga estudyante.*" (Participant 7)

Several teachers also emphasized the importance of continuous professional development.

As one participant explained:

"*Patuloy kaming natututo sa mga webinars, trainings, at mentoring activities dahil bago pa ang MATATAG Curriculum.*" (Participant 9)

The participants viewed collaborative learning communities as valuable platforms for improving instructional competence, enhancing confidence, and sharing innovative classroom practices. Professional collaboration enabled teachers to address implementation challenges collectively while maintaining consistency in curriculum delivery.

The findings support Fullan (2020), who emphasized that sustainable educational reform depends on collaborative professional learning and continuous capacity building among teachers. Similarly, DuFour and Fullan (2013) highlighted that professional learning communities promote instructional improvement through shared expertise, reflective practice, and collaborative problem-solving.

Discussion

The findings demonstrate that Science 7 teachers implementing the MATATAG Curriculum have adopted learner-centered instructional practices characterized by contextualization, inquiry-based learning, instructional adaptation, formative assessment, and professional collaboration. Despite challenges related to instructional resources, curriculum transition, and varying learner needs, participants exhibited resilience, creativity, and commitment in delivering quality Science instruction.

The five emergent themes collectively illustrate that successful implementation of the MATATAG Curriculum extends beyond curriculum compliance. It requires teachers to become reflective practitioners who continuously adapt instructional strategies, contextualize scientific concepts, utilize authentic assessment, and engage in collaborative professional learning. These instructional practices embody the learner-centered and competency-based principles of the MATATAG Curriculum while fostering scientific literacy, critical thinking, and lifelong learning among Science 7 learners.

Hence, the study affirms that the effective implementation of the MATATAG Curriculum depends not only on curriculum policies but also on teachers' professional competence, instructional innovation, institutional support, and collaborative culture within schools. These findings provide important insights for strengthening teacher professional development and sustaining quality Science education in Philippine public secondary schools.

Conclusion

This study explored the instructional practices of Science 7 teachers implementing the MATATAG Curriculum in public secondary schools of Dupax del Norte I District, Schools Division of Nueva Vizcaya. The findings revealed that teachers have embraced learner-centered and competency-based instructional approaches that align with the goals of the MATATAG Curriculum despite the challenges associated with curriculum transition. Their experiences demonstrate that effective Science instruction extends beyond content delivery and requires continuous instructional adaptation, contextualization of learning experiences, inquiry-based pedagogy, and reflective classroom practice.

The study identified five major instructional practices that characterize teachers' implementation of the MATATAG Curriculum: contextualizing Science concepts through learners' lived experiences, utilizing inquiry-based and learner-centered instructional strategies, adapting instructional resources despite limited learning materials, strengthening formative assessment and continuous feedback, and fostering professional growth through collaborative learning communities. These instructional practices enabled teachers to create meaningful and engaging learning experiences while promoting scientific literacy, critical thinking, collaboration, and problem-solving among learners.

Although teachers encountered challenges such as insufficient instructional materials, inadequate laboratory resources, limited instructional time, and varying learner abilities, they consistently demonstrated resilience, creativity, and professional commitment. They addressed these challenges by developing localized instructional materials, improvising laboratory activities, utilizing digital resources, and collaborating with fellow educators through professional learning communities. These adaptive practices illustrate teachers' capacity to transform curriculum reforms into responsive and contextually relevant classroom instruction.

Overall, the study concludes that the successful implementation of the MATATAG Curriculum depends not only on curriculum policies but also on teachers' pedagogical competence, instructional innovation, collaborative professional culture, and sustained institutional support. Strengthening these dimensions will further enhance the quality of Science education and ensure

the effective realization of the MATATAG Curriculum's vision of developing scientifically literate, critical, and lifelong learners.

Implications of the Study

The findings have significant implications for curriculum implementation, teacher professional development, school leadership, and educational policy. First, the study underscores the central role of teachers as curriculum implementers whose instructional decisions directly influence learner engagement and achievement. Their ability to contextualize instruction and employ inquiry-based pedagogies highlights the need for continuous capacity-building initiatives that strengthen pedagogical content knowledge and innovative teaching practices.

Second, the findings suggest that schools should provide stronger institutional support through the provision of adequate instructional resources, laboratory equipment, digital technologies, and contextualized learning materials. Access to these resources will enable teachers to fully implement the inquiry-oriented and competency-based objectives of the MATATAG Curriculum.

Third, the study highlights the importance of collaborative professional learning. Learning Action Cell (LAC) sessions, mentoring programs, peer coaching, and professional learning communities should be strengthened to encourage the sharing of best practices, collaborative lesson planning, and reflective teaching. Such collaborative environments promote continuous instructional improvement and enhance teachers' confidence in implementing curriculum reforms.

Finally, the study contributes to the growing body of knowledge on Science curriculum implementation in the Philippine context. The findings provide empirical evidence that may guide the Department of Education, school administrators, curriculum developers, and teacher education institutions in designing responsive professional development programs and evidence-based interventions that support effective implementation of the MATATAG Curriculum.

Recommendations

Based on the findings and conclusions of the study, the following recommendations are proposed:

1. **The Department of Education** should provide continuous professional development programs focusing on inquiry-based instruction, contextualized Science teaching, authentic assessment, and innovative pedagogical approaches aligned with the MATATAG Curriculum.

2. **School administrators** should strengthen institutional support by providing adequate laboratory facilities, instructional materials, digital learning resources, and financial assistance for the development of contextualized instructional materials.

3. **Science teachers** should continue adopting learner-centered instructional strategies, integrate real-life and community-based contexts into Science lessons, utilize formative assessment practices, and engage in continuous reflective teaching to improve learners' scientific understanding.

4. **Schools** should strengthen Learning Action Cell (LAC) sessions, mentoring programs, and professional learning communities to encourage collaboration, instructional innovation, and the sharing of effective classroom practices among Science teachers.

5. **Teacher education institutions** should align pre-service teacher preparation programs with the instructional principles of the MATATAG Curriculum by strengthening courses on inquiry-based Science teaching, curriculum implementation, classroom assessment, and contextualized instruction.

6. **Curriculum developers and policymakers** should continuously evaluate the implementation of the MATATAG Curriculum through regular monitoring, teacher feedback, and classroom-based research to ensure that curriculum reforms remain responsive to teachers' and learners' needs.

7. **Future researchers** may conduct similar qualitative studies in other districts, divisions, or regions to compare instructional practices across different educational contexts. Future studies may also employ mixed-methods or multiple-case study designs to further examine the relationship between instructional practices, teacher competencies, learner engagement, and Science achievement under the MATATAG Curriculum.

References

Black, P., & Wiliam, D. (2009). Developing the theory of formative assessment. *Educational Assessment, Evaluation and Accountability, 21*(1), 5–31. https://doi.org/10.1007/s11092-008-9068-5

Braun, V., & Clarke, V. (2021). *Thematic analysis: A practical guide*. SAGE Publications.

Bruner, J. S. (1966). *Toward a theory of instruction*. Harvard University Press.

Bybee, R. W. (2013). *The BSCS 5E instructional model: Creating teachable moments*. NSTA Press.

Creswell, J. W., & Poth, C. N. (2018). *Qualitative inquiry and research design: Choosing among five approaches* (4th ed.). SAGE Publications.

Darling-Hammond, L., Flook, L., Cook-Harvey, C., Barron, B., & Osher, D. (2020). Implications for educational practice of the science of learning and development. *Applied Developmental Science, 24*(2), 97–140. https://doi.org/10.1080/10888691.2018.1537791

Department of Education. (2023). *MATATAG curriculum: Revised K to 10 curriculum guide*. Department of Education, Philippines.

DuFour, R., & Fullan, M. (2013). *Cultures built to last: Systemic PLCs at work*. Solution Tree Press.

Fullan, M. (2020). *Leading in a culture of change* (2nd ed.). Jossey-Bass.

Gilbert, J. K. (2006). On the nature of "context" in chemical education. *International Journal of Science Education, 28*(9), 957–976. https://doi.org/10.1080/09500690600702470

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. SAGE Publications.

National Research Council. (2012). *A framework for K–12 science education: Practices, crosscutting concepts, and core ideas*. National Academies Press. https://doi.org/10.17226/13165

Organisation for Economic Co-operation and Development. (2021). *The state of school education: One year into the COVID pandemic*. OECD Publishing. https://doi.org/10.1787/201dde84-en

Patton, M. Q. (2015). *Qualitative research & evaluation methods* (4th ed.). SAGE Publications.

Tomlinson, C. A. (2017). *How to differentiate instruction in academically diverse classrooms* (3rd ed.). ASCD.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press.