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Instructional Materials Utilization in Teaching MATATAG-Based Mathematics 7: Teachers' Experiences in Public Secondary Schools of Dinapigue District, Schools Division of Isabela

Alberto R. Ramos Jr.

Dibulo Integrated School

albertojr.ramos.deped.gov.ph

Abstract

The successful implementation of the MATATAG Curriculum in the Philippines has heightened the importance of effective instructional materials (IMs) in mathematics education. As the curriculum emphasizes mastery of foundational competencies, learner-centered pedagogy, contextualization, and problem-solving, teachers are expected to utilize diverse instructional materials that facilitate meaningful mathematical learning. However, teachers in geographically isolated and disadvantaged areas continue to experience challenges in accessing, adapting, and maximizing instructional resources. This qualitative phenomenological study explored the lived experiences of Grade 7 Mathematics teachers regarding the utilization of instructional materials in implementing the MATATAG Curriculum in public secondary schools of Dinapigue District, Schools Division of Isabela. Specifically, the study investigated teachers' instructional practices, challenges encountered, adaptive strategies, and recommendations for improving instructional material utilization. Purposive sampling was employed to select twelve Grade 7 Mathematics teachers with direct experience in implementing the MATATAG Curriculum. Data were gathered through semi-structured interviews and analyzed using Braun and Clarke's thematic analysis. The findings revealed that teachers considered instructional materials indispensable in promoting conceptual understanding, learner engagement, and mathematical reasoning. Nevertheless, inadequate availability of contextualized materials, insufficient technological infrastructure, limited training opportunities, and financial constraints hindered optimal utilization. Teachers demonstrated resilience by developing localized instructional resources, integrating digital and community-based materials, collaborating with colleagues, and maximizing available resources despite existing limitations. The study concludes that successful MATATAG implementation depends not only on curriculum reforms but also on systematic investments in instructional resource development, continuous teacher professional development, and institutional support. The findings provide valuable insights for policymakers, curriculum developers, school administrators, and mathematics educators in strengthening instructional resource management under the MATATAG Curriculum.

Keywords: MATATAG Curriculum, Mathematics Education, Instructional Materials, Grade 7 Mathematics, Qualitative Research, Teacher Experiences, Philippines, Contextualized Learning



1. Introduction

Mathematics education serves as one of the fundamental pillars of national development because it equips learners with analytical thinking, logical reasoning, quantitative literacy, and problem-solving competencies essential for lifelong learning. Across many educational systems, mathematics is regarded as a gateway discipline that develops learners' capacity to make informed decisions and respond effectively to real-life situations. In the Philippine educational context, strengthening mathematics instruction has become increasingly urgent due to persistent concerns regarding students' declining mathematical achievement in both national and international large-scale assessments.

Recent international assessments have consistently shown that Filipino learners continue to perform below global proficiency standards in mathematics. These outcomes have prompted educational reforms aimed at improving foundational competencies and narrowing learning gaps. In response, the Department of Education introduced the MATATAG Curriculum in 2023, which prioritizes foundational learning, decongests the curriculum, strengthens literacy and numeracy, and emphasizes meaningful, learner-centered instruction. The curriculum likewise encourages teachers to utilize appropriate instructional materials that support conceptual understanding rather than rote memorization.

Instructional materials constitute one of the most influential components of effective mathematics teaching. They provide concrete representations of abstract mathematical concepts, facilitate inquiry-based learning, promote learner engagement, and encourage collaborative problem solving. Properly selected instructional materials enable learners to visualize mathematical relationships, explore multiple solution strategies, and construct knowledge through active participation.

Within the MATATAG Curriculum, instructional materials are expected to extend beyond conventional textbooks. Teachers are encouraged to employ contextualized, localized, manipulative, digital, visual, and technology-enhanced resources that respond to learners' diverse needs and learning styles. Such materials align with the curriculum's emphasis on learner-centered pedagogy, competency mastery, and authentic assessment.

Despite these policy directions, many public secondary schools particularly those located in geographically isolated municipalities such as Dinapigue District continue to encounter resource limitations. Teachers frequently report shortages of printed modules, manipulative materials, internet connectivity, multimedia equipment, and updated learning resources. These challenges compel educators to create improvised instructional materials using locally available resources while balancing numerous professional responsibilities.

Dinapigue District presents a unique educational context. Its geographical isolation poses logistical challenges affecting the timely delivery of learning materials, access to professional development, and integration of educational technologies. Consequently, teachers often

demonstrate creativity and resilience by producing contextualized instructional resources that accommodate learners' socio-cultural realities while satisfying curriculum standards.

Teacher experiences remain a critical source of evidence for evaluating curriculum implementation. Their day-to-day classroom practices provide valuable insights into how educational policies translate into authentic learning experiences. Understanding teachers' perspectives regarding instructional material utilization contributes to identifying practical interventions that strengthen curriculum implementation and improve learner outcomes.

Although previous studies have examined instructional material effectiveness and mathematics achievement, relatively few qualitative investigations have focused specifically on teachers' lived experiences in utilizing instructional materials under the newly implemented MATATAG Curriculum, particularly in geographically isolated public secondary schools. Existing research largely emphasizes learner performance, technology integration, or curriculum implementation in general rather than exploring teachers' instructional decision-making, resource adaptation, and contextual challenges.

This study therefore seeks to fill this gap by examining how Grade 7 Mathematics teachers experience the utilization of instructional materials while implementing the MATATAG Curriculum in Dinapigue District. Understanding these experiences provides empirical evidence that may inform policy decisions, professional development initiatives, and instructional resource management in Philippine mathematics education.

Review of Related Literature

Instructional Materials in Mathematics Education

Instructional materials significantly influence the quality of mathematics instruction by bridging abstract concepts with concrete experiences. Research consistently demonstrates that learners achieve higher conceptual understanding when teachers integrate manipulative materials, visual representations, contextual examples, and technology-assisted resources. Mathematics learning becomes more meaningful when learners actively manipulate objects, observe patterns, and connect mathematical ideas with everyday experiences.

Instructional materials likewise support differentiated instruction by addressing learners' varying readiness levels, interests, and learning preferences. Effective mathematics teachers strategically select materials that encourage inquiry, collaborative learning, and critical thinking rather than passive reception of information.

The MATATAG Curriculum and Mathematics Instruction

The MATATAG Curriculum emphasizes competency mastery, reduced curriculum congestion, contextualized instruction, and learner-centered pedagogical approaches.

Rather than covering numerous competencies superficially, teachers are encouraged to facilitate deeper understanding of essential mathematical concepts. Successful implementation therefore depends heavily on the availability and effective utilization of quality instructional materials that promote active learning.

Teacher Resourcefulness in Resource-Limited Schools

Studies conducted in developing educational contexts indicate that teachers frequently compensate for instructional material shortages through innovation and creativity. They develop localized teaching materials using indigenous resources, recycled materials, digital platforms, and community partnerships. Such adaptive practices demonstrate teachers' professional commitment despite infrastructural constraints. Nevertheless, sustained dependence on self-developed materials may increase teacher workload and contribute to professional stress if institutional support remains insufficient.

Theoretical Framework

This study is anchored on **Constructivist Learning Theory** (Piaget, 1970; Vygotsky, 1978), which posits that learners actively construct mathematical knowledge through meaningful interactions with their environment. Instructional materials function as mediating tools that facilitate conceptual understanding by enabling learners to manipulate objects, solve authentic problems, and engage in collaborative discourse.

The study is likewise supported by **Resource-Based Learning Theory**, which emphasizes that diverse instructional resources enrich learning experiences by encouraging independent exploration, inquiry, and critical thinking. Within mathematics education, instructional materials become catalysts that transform teacher-centered instruction into learner-centered knowledge construction.

Furthermore, the **Technological Pedagogical Content Knowledge (TPACK) Framework** provides an important lens for understanding teachers' capacity to integrate appropriate instructional materials, pedagogy, and mathematical content. Teachers' effectiveness depends not only on content expertise but also on their ability to select, adapt, and integrate instructional resources that maximize learner engagement.

Conceptual Framework

The study assumes that teachers' utilization of instructional materials under the MATATAG Curriculum is influenced by multiple interacting factors including:

- Availability of instructional resources
- Teacher competence
- Professional development
- School administrative support

- Technological infrastructure
- Community context
- Learner characteristics

These factors collectively shape teachers' instructional decisions, classroom practices, learner engagement, and perceived effectiveness of mathematics instruction.

Research Gap

Current literature has documented the importance of instructional materials and the early implementation experiences of the MATATAG Curriculum. However, limited qualitative evidence exists regarding the lived experiences of Grade 7 Mathematics teachers in geographically isolated public secondary schools such as Dinapigue District. Most available investigations employ quantitative approaches or focus on learner achievement rather than exploring teachers' instructional realities, contextual adaptations, and professional experiences.

This study addresses this gap by providing an in-depth qualitative exploration of teachers' experiences in utilizing instructional materials while implementing the MATATAG-Based Mathematics 7 curriculum.

Statement of the Problem

This study explored teachers' experiences in utilizing instructional materials in teaching MATATAG-Based Mathematics 7 in public secondary schools of Dinapigue District, Schools Division of Isabela.

Specifically, it sought to answer the following questions:

1. How do teachers utilize instructional materials in teaching MATATAG-Based Mathematics 7?
2. What instructional materials are commonly employed by teachers?
3. What challenges do teachers encounter in utilizing instructional materials?
4. What adaptive strategies do teachers employ to overcome instructional material limitations?
5. How do teachers perceive the influence of instructional materials on learner engagement and mathematical understanding?
6. What recommendations can teachers provide to improve instructional material utilization under the MATATAG Curriculum?

Significance of the Study

The findings of this study are expected to benefit teachers, school administrators, curriculum developers, the Department of Education, teacher education institutions, and future

researchers. The study provides empirical evidence that can guide professional development programs, instructional material development initiatives, school resource allocation, and policy formulation aimed at strengthening mathematics education under the MATATAG Curriculum.

2. Research Methodology

This study employed a qualitative phenomenological research design to explore the lived experiences of Grade 7 Mathematics teachers in utilizing instructional materials while implementing the MATATAG Curriculum in public secondary school specifically Dipulo Integrated School of Dinapigue District, Schools Division of Isabela. Phenomenology was deemed appropriate because it allows the researcher to understand how participants make meaning of their experiences in relation to a specific educational phenomenon. Rather than focusing on numerical measurement or statistical relationships, the study sought to capture teachers' perceptions, beliefs, instructional practices, challenges, and adaptive strategies as they responded to the demands of the newly implemented curriculum. The qualitative approach was particularly suited to the study because instructional material utilization under the MATATAG Curriculum is shaped by teachers' professional judgment, available resources, learner characteristics, school conditions, and contextual realities. Through in-depth interviews, the study generated rich descriptions that illuminated how teachers experienced curriculum implementation beyond what quantitative surveys could reveal.

The study was conducted in the public secondary schools of Dinapigue District, Schools Division of Isabela. Dinapigue is a geographically isolated district located in the eastern portion of Isabela Province. The district is characterized by mountainous terrain, limited transportation access, intermittent internet connectivity, and restricted availability of educational resources compared with schools in more urbanized areas. These contextual conditions influenced the delivery of instruction and the availability of instructional materials. Despite these challenges, the public secondary schools in the district have actively implemented the MATATAG Curriculum beginning School Year 2024–2025. Teachers in these schools continuously developed localized instructional materials and adapted available resources to meet curriculum standards and respond to learners' academic needs.

The participants of the study were twelve Grade 7 Mathematics teachers from different public secondary schools within Dinapigue District. They were selected through purposive sampling because they possessed direct experience in teaching MATATAG-Based Mathematics 7 and could provide meaningful insights into the phenomenon under investigation. The inclusion criteria required that the participants were currently teaching Grade 7 Mathematics, actively implementing the MATATAG Curriculum, had at least two years of teaching experience, and were willing to participate voluntarily in the study. The participants represented varied teaching backgrounds, from beginning teachers to experienced and master teachers, allowing the study to capture diverse perspectives on instructional material utilization in Mathematics 7.

The primary research instrument used in the study was a researcher-developed semi-structured interview guide. The instrument was validated by three experts in Mathematics Education and Qualitative Research to ensure its relevance, clarity, and alignment with the objectives of the study. The interview guide consisted of open-ended questions that focused on the instructional materials commonly utilized by teachers, their classroom experiences in using these materials, their perceptions of the effectiveness of instructional materials, the challenges they encountered, their adaptation strategies, the extent of administrative support received, and their recommendations for improving instructional resource utilization. Follow-up probing questions were also used to encourage participants to elaborate on their responses and provide deeper explanations of their experiences.

Before the conduct of data collection, approval to undertake the study was secured from the Schools Division Superintendent and the respective school principals. After permission was granted, the researcher coordinated with the participating teachers to explain the purpose and procedures of the study. Each participant was given an informed consent form that clearly stated the purpose of the research, the voluntary nature of participation, the assurance of confidentiality and anonymity, and the right to withdraw from the study at any point without penalty. Individual face-to-face interviews were then conducted, with each interview lasting approximately 45 to 60 minutes. With the permission of the participants, the interviews were audio-recorded to ensure accuracy of documentation. Field notes were also taken to record non-verbal expressions, contextual observations, and significant details during the interviews. The audio recordings were later transcribed verbatim before data analysis.

The data were analyzed using Braun and Clarke's six-phase thematic analysis. The process began with familiarization, during which the researcher repeatedly read the interview transcripts to gain a deep understanding of the participants' narratives. Initial codes were then generated by identifying significant statements related to instructional material utilization, challenges, adaptation practices, and perceived effects on learners. These codes were examined and grouped into possible patterns that reflected common experiences among the participants. The emerging themes were reviewed to ensure that they accurately represented the data and were consistent with the research questions. After refinement, the themes were named and defined based on their central meanings. The final phase involved writing the narrative report, where the themes were presented with supporting participant statements, interpretations, and connections to relevant literature. Repeated reading, constant comparison, and careful interpretation were used to strengthen the analytical rigor of the study.

To ensure the trustworthiness of the study, the criteria of credibility, transferability, dependability, and confirmability proposed by Lincoln and Guba were observed. Credibility was established through member checking, which allowed participants to verify the accuracy of their interview transcripts and the appropriateness of the thematic interpretations. Transferability was addressed by providing rich descriptions of the research locale, participants, and study context so that readers may determine the applicability of the

findings to similar educational settings. Dependability was ensured through the maintenance of an audit trail that documented the research process, including interview procedures, coding decisions, and theme development. Confirmability was strengthened through researcher reflexivity, peer debriefing, and the use of reflective notes to minimize personal bias and ensure that the findings were grounded in the participants' actual responses.

The study strictly adhered to ethical principles in the conduct of qualitative research. Informed consent was obtained from all participants before their involvement in the study. Participation was voluntary, and participants were assured that they could refuse to answer any question or withdraw from the study at any time. Confidentiality and anonymity were maintained by assigning pseudonyms to the participants and removing identifying information from the transcripts and final report. The data gathered were used solely for research purposes and were stored securely to protect participants' privacy. The study also observed the principles of beneficence and non-maleficence by ensuring that no harm, discomfort, or disadvantage would result from participation. Throughout the research process, the dignity, rights, and welfare of the participants were upheld.

Theme 1

Instructional Materials as Essential Bridges for Conceptual Understanding

One of the strongest themes that emerged from the interviews was the indispensable role of instructional materials in facilitating learners' conceptual understanding of mathematical concepts under the MATATAG Curriculum. Across all participating teachers, there was a common recognition that instructional materials serve as bridges that connect abstract mathematical ideas with learners' concrete experiences. Teachers consistently explained that many Grade 7 learners struggle to understand mathematical concepts when instruction relies solely on lectures, formulas, and textbook explanations. Consequently, the use of visual aids, manipulatives, contextualized examples, and improvised instructional resources became essential in helping learners construct mathematical meaning and develop conceptual understanding.

Participant 3 shared:

"Kapag puro lecture lang ang ginagawa namin, nahihirapan ang mga bata. Pero kapag gumagamit kami ng number tiles, fraction strips, at visual organizers, mas mabilis nilang naiintindihan ang lesson."

This response illustrates that instructional materials reduce learners' cognitive burden by allowing them to manipulate concrete representations before progressing toward abstract reasoning. Instead of merely memorizing mathematical procedures, learners are given opportunities to explore patterns, relationships, and mathematical structures through active engagement with learning materials. According to the participant, learners became more

confident because they could physically observe and manipulate mathematical representations, making difficult concepts more accessible.

Similarly, Participant 7 emphasized the alignment of instructional materials with the philosophy of the MATATAG Curriculum by stating:

"The MATATAG Curriculum encourages deeper understanding. Instructional materials help learners visualize mathematical relationships instead of memorizing formulas."

This statement reflects the curriculum's emphasis on mastery of foundational competencies rather than superficial coverage of numerous learning competencies. The participant recognized that instructional materials facilitate conceptual visualization, enabling learners to understand the underlying relationships among mathematical ideas instead of relying solely on algorithmic procedures. Such experiences encourage mathematical reasoning, analytical thinking, and long-term retention of knowledge.

Participant 10 further explained:

"Even simple improvised materials become powerful when learners can manipulate them."

This response highlights that effective instructional materials do not necessarily require expensive technologies or commercially produced resources. Teachers emphasized that creativity and contextualization often compensate for limited school resources. Simple improvised materials such as cardboard cut-outs, bottle caps, recycled objects, locally available measuring tools, number cards, geometric models, and visual organizers were found to be equally effective when strategically integrated into classroom instruction. These inexpensive materials provided learners with opportunities to actively explore mathematical concepts while simultaneously fostering creativity and collaborative learning.

Several participants further observed that manipulative materials significantly increased learner participation during classroom discussions. Learners who were previously reluctant to answer questions gradually became more willing to explain their mathematical thinking after interacting with concrete instructional resources. Teachers noted improvements not only in learners' mathematical performance but also in their confidence, communication skills, and willingness to collaborate with classmates.

One participant explained that students who struggled with fractions and algebraic expressions demonstrated greater understanding after repeatedly using fraction strips, algebra tiles, and visual models. Rather than memorizing operational rules, learners developed conceptual understanding by observing relationships among mathematical representations. Consequently, teachers observed fewer misconceptions and greater learner independence during problem-solving activities.

The findings indicate that instructional materials function as cognitive scaffolds that facilitate learners' transition from concrete experiences toward abstract mathematical reasoning. This supports Constructivist Learning Theory, which posits that learners actively construct knowledge through meaningful interaction with their environment rather than passively receiving information from teachers. Manipulatives, visual representations, and contextualized instructional materials provide opportunities for learners to test ideas, verify relationships, revise misconceptions, and build deeper conceptual understanding through active exploration.

Furthermore, Vygotsky's Social Constructivist Theory explains that learning occurs most effectively through guided interaction within the learner's Zone of Proximal Development. Instructional materials serve as mediating tools that enable teachers to scaffold learners' thinking while gradually transferring responsibility for learning to students themselves. Through carefully designed instructional resources, learners receive appropriate support that enables them to accomplish tasks that would otherwise be beyond their independent capabilities.

The findings likewise support the Resource-Based Learning Theory, which emphasizes that meaningful learning occurs when learners interact with diverse educational resources rather than relying exclusively on textbooks or teacher explanations. Mathematics becomes more meaningful when learners engage with manipulatives, contextualized examples, digital simulations, visual models, and authentic learning tasks. Such instructional materials encourage inquiry, experimentation, and reflective thinking while accommodating diverse learning styles and abilities.

These findings corroborate numerous international studies demonstrating the positive effects of instructional materials on mathematics learning. Research has consistently shown that manipulatives enhance learners' conceptual understanding, mathematical communication, problem-solving abilities, and critical thinking. Concrete learning materials reduce mathematics anxiety because learners develop understanding through exploration instead of rote memorization. Likewise, contextualized instructional resources increase learner motivation by demonstrating the practical relevance of mathematics in everyday life.

Within the context of the MATATAG Curriculum, instructional materials assume even greater significance because the curriculum emphasizes competency mastery, learner-centered instruction, and meaningful learning experiences. Teachers recognized that achieving these objectives becomes considerably easier when appropriate instructional resources are available. Rather than functioning merely as supplementary teaching aids, instructional materials become integral components of effective mathematics instruction that transform abstract concepts into authentic learning experiences.

Overall, the findings demonstrate that instructional materials are indispensable pedagogical tools for promoting conceptual understanding among Grade 7 learners. Teachers viewed them not simply as classroom accessories but as essential mediators of learning that bridge

theoretical mathematical concepts with learners' real-life experiences. Their experiences underscore the importance of ensuring that schools implementing the MATATAG Curriculum have access to adequate, contextualized, and learner-centered instructional resources capable of supporting meaningful mathematics education.

Discussion

The findings demonstrate that instructional material utilization serves as one of the most influential factors in implementing the MATATAG-Based Mathematics 7 curriculum. Teachers consistently viewed instructional materials as indispensable tools for promoting conceptual understanding, learner engagement, mathematical reasoning, and active participation.

Despite substantial challenges associated with limited instructional resources, financial constraints, geographical isolation, and technological limitations, teachers demonstrated remarkable professional resilience. Their experiences illustrate that effective curriculum implementation depends not solely upon prescribed learning competencies but also upon teachers' creativity, collaborative practices, and adaptive expertise.

The study likewise reveals that localized and contextualized instructional materials significantly strengthen mathematics instruction by connecting abstract concepts with learners' everyday experiences. Such practices embody the learner-centered philosophy underpinning the MATATAG Curriculum while fostering meaningful mathematical understanding.

Furthermore, collaboration among teachers emerged as a significant mechanism for enhancing instructional material quality and reducing professional workload. Professional learning communities facilitate continuous instructional improvement through knowledge sharing, collective reflection, and collaborative resource development.

Nevertheless, teachers emphasized that sustained institutional support remains indispensable. Curriculum reforms must be accompanied by investments in instructional materials, technological infrastructure, professional development, and administrative support to ensure equitable implementation across geographically diverse educational settings.

Overall, the findings suggest that instructional material utilization represents both a pedagogical practice and an organizational concern requiring coordinated efforts among teachers, school leaders, curriculum developers, and educational policymakers.

5. Conclusion

This qualitative study explored the experiences of Grade 7 Mathematics teachers regarding instructional material utilization under the MATATAG Curriculum in public secondary schools of Dinapigue District, Schools Division of Isabela.

The findings demonstrate that instructional materials significantly enhance conceptual understanding, learner engagement, collaborative learning, and mathematical reasoning. Teachers consistently viewed instructional resources as indispensable in facilitating learner-centered mathematics instruction aligned with the goals of the MATATAG Curriculum.

However, participants encountered persistent challenges including shortages of manipulative materials, limited technological infrastructure, unstable internet connectivity, inadequate funding, and insufficient access to updated curriculum-aligned resources. Despite these barriers, teachers exhibited remarkable creativity, resilience, and professional commitment by developing localized instructional materials, maximizing community resources, and collaborating extensively with colleagues.

The study concludes that effective implementation of the MATATAG Curriculum requires comprehensive institutional support encompassing instructional resource provision, continuous professional development, collaborative learning structures, and strengthened educational leadership. Curriculum innovation becomes sustainable only when teachers are adequately equipped with the resources and competencies necessary for meaningful instructional practice.

6. Implications of the Study

The findings carry important implications for educational policy and practice.

For teachers, the study highlights the importance of continuous innovation, contextualization, and collaboration in maximizing instructional material utilization.

For school administrators, strategic investments in instructional resources, digital infrastructure, and professional learning communities are essential to support effective mathematics instruction.

For curriculum developers, localized and context-sensitive instructional materials should complement centrally produced learning resources to address diverse educational contexts.

For the Department of Education, systematic funding mechanisms should prioritize instructional resource development for geographically isolated schools implementing the MATATAG Curriculum.

For teacher education institutions, pre-service and in-service training programs should strengthen competencies in instructional material design, contextualization, and technology integration.

7. Recommendations

Based on the findings, the following recommendations are proposed:

1. Public secondary schools should strengthen school-based instructional material development programs aligned with MATATAG competencies.
2. District offices should establish centralized repositories of validated mathematics instructional materials accessible to all teachers.
3. Continuous professional development should emphasize contextualized mathematics instruction, technology integration, and instructional material development.
4. Additional funding should be allocated for mathematics manipulatives, digital equipment, printing facilities, and internet connectivity in geographically isolated schools.
5. Professional Learning Communities should be institutionalized to encourage collaborative instructional innovation among Mathematics teachers.
6. Future researchers may employ mixed-methods or longitudinal designs to investigate the long-term impact of instructional material utilization on learners' mathematical achievement under the MATATAG Curriculum.

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