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Kindergarten Teachers' Experiences on Learners with Challenges in Numeracy Skills

Darlin B. Hermoso & Michelle C. Calimpong
Department of Education

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*Corresponding Author:
balicaoldarlin@gmail.com

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ABSTRACT

This study explored Kindergarten teachers' lived experiences in supporting learners with delayed numeracy skills in selected public elementary schools in Clarin District, Division of Misamis Occidental, during School Year 2025–2026. Twelve purposively selected Kindergarten teachers participated in semi-structured interviews. Interview narratives were examined through Braun and Clarke's thematic analysis. Findings documented instructional, emotional, and classroom-management demands; difficulties in identifying and assessing delays; and constraints involving learning resources, professional preparation, and external support. Teachers described the use of manipulatives, play-based and differentiated instruction, remediation, and collaboration with families and colleagues. The findings indicate the importance of developmentally appropriate teaching, sustained assessment support, professional development, and home–school partnerships in strengthening early numeracy and school readiness.

Keywords: *assessment; intervention; numeracy; school readiness; Kindergarten teachers*

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Introduction

Early numeracy is a fundamental component of school readiness and provides the foundation for later mathematical learning. During Kindergarten, children begin to develop number recognition, counting, quantity comparison, number–symbol correspondence, and elementary problem-solving through concrete and play-based experiences. However, learners enter formal schooling with varied developmental experiences and levels of mathematical understanding. Those who experience difficulty with foundational numeracy tasks may require differentiated instruction and sustained classroom support. Research on early mathematics emphasizes the importance of developmentally appropriate learning experiences and teacher-guided engagement with mathematical ideas (Sarama & Clements, 2021).

In the Philippine Kindergarten setting, teachers are expected to observe learners' developmental progress and respond to emerging learning needs. The Early Childhood Care and Development (ECCD) Checklist provides information about developmental readiness, including cognitive indicators relevant to early numeracy. Nevertheless, assessment information must be translated into practical classroom decisions, such as selecting manipulatives, adjusting the pace of instruction, organizing small-group activities, and providing additional guided practice. These tasks can become particularly demanding when children exhibit different levels of readiness within the same class.

Vygotsky's Sociocultural Theory (1978) emphasizes interaction, scaffolding, and support from more knowledgeable others; Bruner's Constructivist Theory (1966) highlights children's active construction of knowledge through concrete experiences; and Bronfenbrenner's Ecological Systems Theory (1979) draws attention to the influence of family, school, and community contexts on development. Together, these perspectives provide a basis for understanding how teachers interpret numeracy difficulties, adapt instruction, and navigate the support available to learners. A phenomenological orientation further centers teachers' accounts of their lived classroom experiences.

Although developmental assessments can identify learners who need additional assistance, they do not fully explain the professional judgments, instructional adjustments, and practical constraints involved in responding to delayed numeracy skills. In Clarin District, Division of Misamis Occidental, there is therefore a need to examine the experiences of kindergarten teachers who work directly with learners demonstrating such difficulties. Understanding these experiences can provide context-specific evidence for improving early numeracy interventions and support mechanisms.

Hence, this study explored Kindergarten teachers' lived experiences in handling learners with delayed numeracy skills during School Year 2025–2026. Specifically, it examined (1) their classroom experiences in supporting these learners; (2) the challenges they encountered in identifying, assessing, and addressing numeracy difficulties; and (3) the instructional strategies and support mechanisms they employed or considered necessary to promote school readiness. The findings were intended to inform responsive classroom practice, professional development, and school-level support for early numeracy learning.

Methods

The study employed a qualitative phenomenological design to explore the lived experiences of 12 purposively selected Kindergarten teachers in Clarin District, Division of Misamis Occidental, during School Year 2025–2026, concerning learners with delayed numeracy skills. Data were gathered through a researcher-modified semi-structured interview guide that underwent expert validation and pilot testing to improve the clarity and relevance of the questions. After securing the necessary institutional permissions and participants' informed consent, the researcher conducted individual interviews, documented the responses, and analyzed the narratives thematically to identify recurring experiences, challenges, instructional strategies, and support mechanisms. Confidentiality, voluntary participation, and careful handling of participants' accounts were observed throughout the research process. After each interview session, the audio recordings were transcribed verbatim for analysis. All transcripts were reviewed for accuracy and completeness. Identifying information was removed, and pseudonyms were assigned to maintain confidentiality. The collected data were then organized, coded, and analyzed using thematic analysis to address the research questions of the study. All research materials were securely stored, and upon completion of.

All interviews were audio-recorded with the consent of the participants and were transcribed verbatim to ensure accuracy and completeness of the data. The researcher carefully reviewed each transcript multiple times to become fully immersed in the data. Participants' original words and expressions were preserved to maintain authenticity and ensure that their lived experiences were accurately represented. The transcribed data were then coded.

Results and Discussions

Table 1. Codes and themes on teachers' experiences in handling learners with delayed numeracy skills

Code	Themes
Difficulty simplifying basic numeracy concepts and instructions	Instructional Challenges in Numeracy Teaching
Struggles in adjusting lesson pacing to suit learners' needs	
Managing learners with varying numeracy levels in one class	
Limited attention span and readiness of learners	
Feelings of frustration, stress, and pressure due to slow learner progress	Emotional Impact on Teachers
Maintaining patience in repetitive teaching situations	
Sense of fulfillment when learners show improvement	
Experiencing fatigue or burnout from continuous remediation	
Use of manipulatives such as blocks, counters, and visual aids	Instructional Strategies and Adaptations
Implementation of differentiated instruction and one-on-one support	
Integration of games, songs, and interactive activities	
Conducting remedial or intervention sessions	
Difficulty maintaining engagement while assisting struggling learners	Classroom Management and Learner Engagement
Balancing attention between advanced and delayed learners	
Managing disruptions and off-task behaviors	
Challenges in time management during numeracy lessons	
Lack of instructional materials and numeracy resources	Support Systems and Professional Development Needs
Limited access to training on teaching numeracy delays	
Need for parental involvement in reinforcing skills at home	
Collaboration with colleagues and school administrators	

Teachers reported persistent difficulty in simplifying basic numeracy concepts into forms that are developmentally appropriate and easily understood by learners. Numeracy, though foundational, requires conceptual understanding that some learners have not yet fully developed. As a result, teachers must continuously modify their explanations and employ multiple representations of the same concept. This finding

aligns with Clements and Sarama (2014), who emphasized the importance of developmentally appropriate learning trajectories in early mathematics instruction.

Participants also emphasized the challenge of adjusting lesson pacing. While some learners grasp concepts quickly, others require repeated exposure and extended time, creating tension between meeting curriculum expectations and addressing individual learning needs. Tomlinson (2014) emphasized that differentiated instruction is essential in addressing learners' varying readiness levels and learning needs.

The emotional impact of handling learners with delayed numeracy skills was also evident in the participants' experiences. One participant expressed:

"Sometimes I question if my strategies are effective because improvement is not immediate."

This statement reflects teachers' frustration and uncertainty when learners demonstrate slow progress despite continuous instructional efforts. Skaalvik and Skaalvik (2017) explained that challenging teaching conditions and concerns about instructional effectiveness are associated with teacher stress and emotional exhaustion. Nevertheless, teachers also experienced fulfillment when learners demonstrated gradual improvement, reinforcing their commitment to providing continued support.

Teachers likewise employed instructional adaptations, including manipulatives, visual aids, differentiated instruction, educational games, and remedial activities. These strategies helped make abstract mathematical concepts more concrete and accessible to young learners. Bruner (1966) emphasized the importance of concrete and visual representations in developing conceptual understanding, while Weisberg et al. (2016) highlighted the educational value of guided play in supporting children's learning.

A key issue identified was the difficulty of maintaining engagement while assisting struggling learners. Teachers reported that focusing attention on learners with delayed numeracy skills often resulted in reduced engagement among other learners. Emmer and Sabornie (2015) emphasized that effective classroom management requires balancing instructional activities, learner participation, and behavioral expectations to maintain a productive learning environment.

Furthermore, limited instructional resources, insufficient professional training, and the need for parental involvement emerged as important concerns. Darling-Hammond et al. (2017) emphasized that sustained professional development strengthens teachers' instructional practices, while Epstein (2011) highlighted the importance of school–family partnerships in supporting children's learning.
From a deeper analytical perspective, these findings suggest that classroom management in kindergarten settings is a dynamic and multifaceted process that requires balancing instructional delivery with learner engagement and behavior regulation. Teachers are not only managing content but also orchestrating interactions, attention, and participation within a highly diverse learning environment. Overall, the findings underscore the importance of differentiated instruction, emotional resilience, appropriate instructional resources, and collaborative support systems in addressing delayed numeracy skills among kindergarten learners.

2. Challenges in Identifying, Assessing, and Addressing Delayed Numeracy

Code	Themes
Difficulty distinguishing between normal variation and actual delay	Challenges in Identifying Numeracy Delays
Lack of clear indicators or benchmarks for early numeracy skills	
Inconsistent learner performance during activities	
Limited observation time for individual learners	

Difficulty using appropriate assessment tools for young learners	Assessment-Related Challenges
Lack of standardized or developmentally appropriate assessment instruments	
Challenges in documenting and tracking learner progress	
Time constraints in conducting individual assessments	
Difficulty designing appropriate intervention activities	Challenges in Addressing Numeracy Delays
Limited strategies for remediation of numeracy skills	
Adapting instruction to meet diverse learner needs	
Insufficient instructional materials and resources	
Lack of training in early numeracy assessment and intervention	Professional and Capacity Limitations
Limited access to seminars and professional development programs	
Uncertainty in applying effective teaching approaches	
Need for specialized knowledge in early childhood numeracy	
Limited parental involvement in supporting numeracy at home	External Support and Environmental Constraints
Lack of coordination with parents and guardians	
Insufficient support from school administrators	
Large class size affecting individualized instruction	

Theme 1: Challenges in Identifying Numeracy Delays. This theme highlights the difficulties encountered by kindergarten teachers in accurately identifying learners with delayed numeracy skills. The findings reveal that early identification is a complex and nuanced process, influenced by developmental variability, limited assessment benchmarks, and contextual classroom constraints.

A key challenge identified is the difficulty in distinguishing between normal developmental variation and actual numeracy delay. Teachers expressed uncertainty in determining whether a learner's difficulty is part of typical developmental progression or an indicator of a more significant learning concern:

Another significant issue is the lack of clear indicators or benchmarks for early numeracy skills. Teachers reported that the absence of standardized or developmentally appropriate criteria makes it challenging to assess learners' numeracy readiness:

"Their performance is not consistent, so it is hard to assess their actual ability."

In essence, this theme reveals that challenges in identifying numeracy delays stem from a combination of developmental variability, lack of clear assessment frameworks, inconsistent learner performance, and contextual limitations. These findings underscore the need for standardized assessment tools, professional training, and structural support to enhance teachers' capacity for early identification and intervention. From an analytical perspective, these findings suggest that assessment in kindergarten numeracy is a complex and constrained process, shaped by both pedagogical and structural limitations. Teachers are required to make evaluative judgments based on incomplete or informal data, which may affect the accuracy of identifying learners' needs.

The findings can be interpreted through Ecological Systems Theory (Bronfenbrenner, 1979, as cited in Tudge et al., 2020), which posits that child development is influenced by multiple interconnected systems, including family, school, and community. In this context, limited support from any of these systems can hinder learners' numeracy development. Furthermore, the results align with Education Systems Strengthening frameworks, which emphasize that improving learning outcomes requires coordinated efforts across multiple levels, including families, schools, and policy structures (UNESCO, 2021; World Bank, 2022). In essence, this theme reveals that external support and environmental constraints play a significant role in shaping teachers' experiences and effectiveness. Limited parental involvement, weak coordination, insufficient administrative support, and large class sizes collectively hinder efforts to address delayed numeracy skills.

These findings underscore the need for stronger home-school partnerships, improved institutional support, and systemic interventions to.

3. Instructional Strategies and Support Mechanisms

Table 3. Codes and themes on instructional strategies and support mechanisms

Code	Themes
Use of manipulatives such as counting blocks, beads, and visual aids	Use of Developmentally Appropriate Instructional Strategies
Integration of play-based learning, games, and songs	
Application of differentiated instruction based on learner ability	
Providing one-on-one or small group instruction	
Conducting remedial classes and targeted intervention activities	Intervention and Remediation Practices
Repetition and reinforcement of basic numeracy concepts	
Use of scaffolded instruction to build foundational skills	
Monitoring and adjusting interventions based on learner progress	
Collaboration with parents to support numeracy learning at home	Home-School Collaboration and Support
Providing parents with guidance and learning materials	
Regular communication with parents on learner progress	
Encouraging parental involvement in practice activities	
Need for more training on early numeracy teaching strategies	Professional Development and Capacity Building Needs
Participation in seminars, workshops, and trainings	
Seeking support from colleagues and school heads	
Desire for updated and effective teaching approaches	
Availability of learning materials and numeracy resources	Institutional and Instructional Support Mechanisms
Support from school administrators and programs	

Access to structured intervention programs	
Need for improved classroom resources and facilities	

Theme 1: Use of Developmentally Appropriate Instructional Strategies. This theme highlights the instructional strategies employed by kindergarten teachers that are developmentally appropriate for addressing delayed numeracy skills and promoting learners' school readiness. The findings reveal that teachers prioritize hands-on, interactive, and differentiated approaches to support learners' understanding of foundational numeracy concepts.

A key strategy identified is the use of manipulatives such as counting blocks, beads, and visual aids, which help learners concretize abstract mathematical ideas. Teachers emphasized that these materials enhance comprehension by allowing learners to engage physically with numbers.This finding is supported by Carbonneau, Marley, and Selig (2013, as cited in Fyfe et al., 2020), who found that concrete manipulatives significantly improve mathematical understanding when used appropriately. Additionally, Fyfe et al. (2020) emphasize that structured use of manipulatives enhances conceptual learning in early mathematics.

Teachers also reported the integration of play-based learning, games, and songs as an effective strategy to increase engagement and facilitate learning. These approaches make numeracy instruction more enjoyable and meaningful for young learners. Teachers also emphasized the importance of providing one-on-one or small group instruction, which allows for focused support and individualized guidance. More so, teachers also emphasized the importance of repetition and reinforcement of basic numeracy concepts, which are essential for mastery and retention.

This aligns with Formative Assessment practices, which emphasize continuous monitoring and feedback to improve learning outcomes (Bennett, 2011, as cited in Andrade & Brookhart, 2020). Additionally, OECD (2021) highlights that responsive teaching, based on ongoing assessment, is essential for addressing diverse learner needs.

From an analytical perspective, the findings suggest that home-school collaboration is a critical component of effective numeracy intervention. Teachers recognize that learning extends beyond the classroom and that parental involvement plays a vital role in reinforcing foundational skills.

Another important aspect is seeking support from colleagues and school heads, which reflects collaborative professional learning within the school context:

A key factor identified is the availability of learning materials and numeracy resources, which teachers consider essential in delivering effective and engaging instruction. This finding is supported by Burns et al. (2020), who stress that structured intervention programs improve student outcomes when implemented consistently. Furthermore, EEF (2021) highlights that well-designed intervention programs are effective in addressing early numeracy difficulties**.**

Conclusions

The study concludes that Kindergarten teachers' experiences in supporting learners with delayed numeracy skills are multifaceted, involving instructional adaptation, emotional commitment, and continuous attention to differing developmental needs. Teachers encountered interconnected difficulties in identifying and assessing numeracy gaps, managing varied learning abilities, securing suitable instructional materials, and obtaining consistent support. In response, they employed developmentally appropriate strategies, including play-based activities, manipulatives, differentiated instruction, repetition, and collaboration with parents and school personnel.

Recommendations

Kindergarten teachers are encouraged to strengthen developmentally appropriate, play-based, differentiated, and manipulative-supported numeracy instruction while regularly monitoring learners' progress. School heads should provide relevant professional development, mentoring, instructional materials, and support for timely

intervention. Curriculum planners should develop contextualized early numeracy programs and practical guidance that respond to learners' developmental differences and classroom realities. Parents and guardians should reinforce number concepts through simple home activities and maintain communication with teachers. Future researchers may examine the effectiveness of specific numeracy interventions, follow learners' progress over time, and include wider school and family contexts to extend the present findings.

Conflict of Interests

The author declares no conflict of interest.

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