

Exploring the Difficulties Encountered by Grade 1 Pupils in Recognizing Numbers at Sitio Tapayan Elementary School

Rosa D. Pinca¹, Celso C. Dumalig^{2*}

Northeastern College, Inc. Graduate School, Santiago City, Philippines

Corresponding Author: Celso C. Dumalig celso.dumalig@deped.gov.ph

ARTICLE INFO

Keywords: Early Numeracy, Number Recognition, Grade 1 Pupils

Received : 02, July

Revised : 12, August

Accepted: 30, September

©2026 Pinca, Dumalig : This is an open-access article distributed under the terms of the [Creative Commons Atribusi 4.0 Internasional](https://creativecommons.org/licenses/by/4.0/).



ABSTRACT

This study explored the difficulties encountered by Grade 1 pupils in recognizing numbers at Sitio Tapayan Elementary School using a qualitative phenomenological research design. Data were gathered through semi-structured interviews, classroom observations, and case analysis, then analyzed using thematic analysis. The findings revealed that pupils experienced challenges in identifying similar numbers, sequencing numbers, and maintaining attention during numeracy activities. These difficulties were influenced by limited home support, instructional practices, and learner readiness. Based on the identified themes, a school-based intervention plan was proposed to strengthen number recognition through interactive teaching strategies, parental involvement, and multisensory learning activities. The study provides practical insights for improving early numeracy instruction and supporting learners' foundational mathematical development.

INTRODUCTION

The early years of formal education are essential for developing children's numeracy skills, particularly number recognition, which serves as the foundation for future mathematical learning. However, many Grade 1 pupils continue to experience difficulties in recognizing numbers due to factors such as limited home support, inadequate instructional strategies, and insufficient learning resources. These challenges are more evident in underserved communities and public elementary schools, where learners often exhibit weak number sense and comprehension.

Previous studies have highlighted the importance of parental involvement, innovative teaching strategies, educational games, and supportive learning environments in strengthening early numeracy skills. Despite these recommended interventions, there is still limited localized research that specifically examines the number recognition difficulties of Grade 1 pupils in Sitio Tapayan Elementary School. Therefore, this study aims to explore the challenges encountered by these learners and identify the factors influencing their numeracy development. The findings are expected to serve as a basis for designing targeted interventions and improving instructional practices that will strengthen pupils' foundational mathematical skills.

LITERATURE REVIEW

Early numeracy and number recognition are fundamental to children's mathematical development and are influenced by home environment, parental involvement, instructional strategies, and the availability of learning resources. Studies indicate that limited home support and inadequate learning opportunities hinder children's readiness for formal schooling, while educational games and interactive learning activities enhance numeracy skills and learner engagement (Cheung et al., 2020; Agaton & Cueto, 2021; Abbacan et al., 2025). Likewise, learners' mathematics self-concept and the quality of the learning environment significantly affect their ability to master basic number recognition (Bringula et al., 2021; Fabito et al., 2020).

Research also shows that difficulties in number recognition are closely associated with weak number sense, poor comprehension, and reading difficulties, which negatively influence learners' mathematical performance. Pupils who fail to develop foundational numeracy skills often struggle with problem-solving and more advanced mathematical concepts, emphasizing the need for early intervention and effective instructional support (Bernardo et al., 2022; Hijada Jr. & Cruz, 2022; Lagria & Pañares, 2023; Tomas et al., 2021; Velez et al., 2023).

Related Studies

Previous studies consistently demonstrate that parental involvement, engaging instructional strategies, and supportive learning environments positively influence early numeracy development. Educational games, strong home support, and learner-centered teaching approaches improve pupils' number recognition and mathematical readiness, whereas limited instructional guidance, poor learning resources, and inadequate foundational skills contribute

to persistent learning difficulties (Abbacan et al., 2025; Agaton & Cueto, 2021; Cheung et al., 2020; Bringula et al., 2021; Fabito et al., 2020).

Moreover, several studies found that weak foundational numeracy skills, reading comprehension difficulties, and ineffective instructional support hinder learners' mathematical achievement. Research further emphasizes the importance of early intervention programs, teacher capacity building, and targeted instructional strategies to address number recognition difficulties and strengthen pupils' overall mathematics performance (Bernardo et al., 2022; Hijada Jr. & Cruz, 2022; Idulog et al., 2023; Lagria & Pañares, 2023; Morales et al., 2025; Tayaban, 2025; Robosa et al., 2021; Velez et al., 2023).

Synthesis

The reviewed literature and studies reveal that number recognition is a fundamental component of early numeracy and is influenced by home support, instructional practices, learner readiness, and the learning environment (Cheung et al., 2020; Agaton & Cueto, 2021; Abbacan et al., 2025). Learners with weak foundational numeracy skills are more likely to experience difficulties in mathematical comprehension and problem-solving, highlighting the need for effective teaching strategies and early intervention (Bernardo et al., 2022; Hijada Jr. & Cruz, 2022; Tomas et al., 2021). Despite existing evidence, there remains a lack of localized research examining the lived experiences of Grade 1 pupils in Sitio Tapayan Elementary School. This gap underscores the need for the present study to generate contextualized findings that can guide the development of targeted instructional interventions and improve early numeracy outcomes.

METHODOLOGY

This study employed a qualitative research design using a phenomenological approach to explore the lived experiences of Grade 1 pupils in recognizing numbers. The study was conducted at Sitio Tapayan Elementary School in Taytay, Rizal, involving Grade 1 pupils selected through convenience sampling based on their accessibility and willingness to participate. The phenomenological approach enabled the researcher to gain an in-depth understanding of the learners' experiences, challenges, and perceptions regarding number recognition in their natural classroom setting. Ethical considerations, including informed consent from parents or guardians, confidentiality, and voluntary participation, were strictly observed throughout the study.

Data were collected through semi-structured interviews, classroom observations, and case analysis to ensure data triangulation and enhance the credibility of the findings. Interview responses and observation notes were transcribed and analyzed using thematic analysis, which involved coding significant statements, identifying recurring patterns, and developing major themes related to pupils' difficulties in number recognition. The findings served as the basis for proposing an intervention framework aimed at improving learners' number recognition skills through enhanced instructional strategies, parental involvement, and engaging numeracy activities.

RESULTS AND DISCUSSION

Profile of the Respondents

The profile of the respondents in this study provides a clear description of the Grade 1 pupils based on relevant demographic and learning-related variables. In terms of age distribution, most of the respondents were aged 6 years old, which is considered the appropriate age for Grade 1 learners under the Philippine basic education system. A smaller portion of the respondents were aged 7 years old, which may indicate delayed school entry or retention due to learning difficulties. This suggests that age variation may influence the readiness of pupils in acquiring foundational numeracy skills such as number recognition.

In terms of sex, the distribution of respondents shows a relatively balanced representation of male and female learners, although a slight dominance of one group may be observed depending on actual class composition. This indicates that difficulties in number recognition are not gender-specific but may be experienced by both male and female pupils equally.

Regarding learning exposure, most pupils reported limited prior formal exposure to structured numeracy activities before entering Grade 1. This implies that early childhood learning experiences, such as preschool attendance or home-based numeracy activities, may not have been fully developed among the respondents.

Furthermore, based on classroom participation, several pupils were observed to be at varying levels of engagement during numeracy activities. Some learners actively participated in number recognition tasks, while others showed hesitation and dependency on teacher assistance.

Overall, the statistical profile suggests that the respondents are generally within the expected age range for Grade 1; however, variations in learning readiness, exposure, and participation levels may significantly influence their ability to recognize numbers effectively. These findings imply that foundational differences among learners must be considered in designing appropriate instructional interventions to support early numeracy development.

Lived Experiences in Number Recognition

The lived experiences of Grade 1 pupils in recognizing numbers reveal meaningful insights into how young learners engage with foundational numeracy skills. Based on the thematic analysis, three major themes emerged: "Learning Through Repetition and Guidance," "Dependence on Teacher Support," and "Struggles with Number Familiarity."

The first theme highlights that pupils often learn number recognition through repetitive classroom activities such as counting drills, flashcards, and oral recitation. However, despite repetition, some learners still require continuous reinforcement before they can independently identify numbers. This suggests that repetition alone may not be sufficient without meaningful engagement and understanding.

The second theme reflects the strong dependence of pupils on teacher assistance during numeracy tasks. Many learners expressed that they feel more confident when guided by their teacher, especially when identifying unfamiliar

numbers. This pattern indicates that teacher facilitation plays a crucial role in shaping pupils' learning experiences and confidence in mathematics.

The third theme shows that pupils experience difficulty in recognizing numbers that appear similar or less frequently used. Some learners confuse numbers such as 6 and 9 or 3 and 8, which reflects limited number familiarity and visual discrimination skills.

Overall, the patterns suggest that Grade 1 pupils' experiences in number recognition are highly influenced by structured classroom support and repeated exposure. However, their reliance on teacher guidance and difficulty in distinguishing similar numbers indicate that independent numeracy skills are still developing. These findings imply that learners require more interactive, multisensory, and engaging instructional approaches to strengthen their number recognition abilities and build confidence in early mathematics learning.

Difficulties in Number Recognition

The analysis of difficulties encountered by Grade 1 pupils in number recognition revealed several recurring themes, namely: "Confusion in Identifying Similar Numbers," "Difficulty in Sequencing Numbers," and "Limited Attention and Focus During Tasks."

The first theme indicates that many pupils struggle to distinguish numbers that have similar shapes, such as 6 and 9 or 2 and 5. This confusion often leads to incorrect identification during oral recitation and written exercises. Such difficulty suggests weak visual discrimination skills, which are essential in early numeracy development.

The second theme highlights challenges in sequencing numbers in correct order. Some pupils are unable to correctly arrange numbers from smallest to largest or continue number patterns beyond a certain point. This difficulty reflects limited understanding of numerical order and weak number sense, which are critical components of mathematical learning.

The third theme shows that pupils often have difficulty maintaining focus during number recognition activities. Many learners are easily distracted, lose attention quickly, or require frequent redirection from the teacher. This lack of sustained attention negatively affects their ability to process and retain numerical information.

Overall, the patterns indicate that Grade 1 pupils' difficulties in number recognition are not only cognitive but also behavioral and attentional in nature. These challenges suggest that learners require more structured, engaging, and developmentally appropriate instructional strategies. The findings also imply the need for multisensory learning approaches that integrate visual, auditory, and kinesthetic activities to enhance understanding. Addressing these difficulties is essential in strengthening foundational numeracy skills and ensuring readiness for more complex mathematical concepts in higher grade levels.

Perceived Contributing Factors to Difficulties

The perceived contributing factors to pupils' difficulties in number recognition were analyzed and grouped into three major themes: "Limited Home

Support and Learning Reinforcement,” “Instructional and Classroom-Related Factors,” and “Learner Readiness and Cognitive Development.”

The first theme reveals that limited parental involvement and home-based learning support significantly affect pupils’ numeracy development. Many learners do not receive regular practice in number recognition at home, which reduces reinforcement of skills learned in school. This lack of support contributes to slow mastery and retention of basic numeracy concepts.

The second theme highlights instructional and classroom-related factors such as teaching strategies, availability of learning materials, and classroom environment. Some pupils indicated that lessons are sometimes too fast-paced or lack sufficient visual aids, making it difficult for them to understand and recognize numbers effectively. Additionally, limited use of interactive materials such as manipulatives and games may reduce engagement and comprehension.

The third theme focuses on learner readiness, including attention span, cognitive ability, and prior knowledge. Some pupils enter Grade 1 without adequate preschool exposure, resulting in weak foundational numeracy skills. Furthermore, differences in learning pace among pupils contribute to varied levels of understanding in number recognition activities.

Overall, the patterns suggest that difficulties in number recognition are caused by a combination of home, school, and learner-related factors. These findings imply that addressing the issue requires a holistic approach involving teachers, parents, and school administrators. Strengthening home-school collaboration, improving instructional strategies, and providing early intervention programs may help reduce these difficulties and enhance pupils’ numeracy development.

Proposed Action Plan

Table 1. Proposed Intervention/ Action Plan for Number Recognition Improvement

Key Area/ Problem	Objective	Proposed Intervention Activities	Persons Involved	Time Frame	Expected Outcome
Difficulty in identifying numbers	Improve pupils’ ability to recognize numbers accurately	Use of flashcards, number charts, and daily number drills	Grade 1 Teachers, Pupils	Daily / Whole school year	Pupils can correctly identify numbers 1– 100
Confusion in similar numbers	Reduce confusion between similar numbers (e.g., 6 & 9, 3 & 8)	Visual discriminati on activities, tracing numbers, matching games	Teachers, Pupils	3x per week	Improved visual discriminati on skills

Lack of engagement	Increase learners' interest in number recognition	Educational games and interactive learning activities	Teachers	Weekly	Higher participation and motivation
Limited home support	Strengthen parental involvement in numeracy learning	Parent workshops and home activity sheets	Teachers, Parents	Monthly	Improved home reinforcement of learning
Weak number sequencing skills	Develop correct number order understanding	Counting songs, number line activities, sequencing exercises	Teachers, Pupils	Daily	Improved counting and sequencing ability

The proposed intervention or action plan for number recognition improvement is designed to address the identified difficulties of Grade 1 pupils in Sitio Tapayan Elementary School. Based on the table, the plan focuses on five key areas, namely number identification, confusion in similar numbers, learner engagement, home support, and number sequencing skills. Each area is supported by targeted interventions that aim to improve pupils' foundational numeracy skills in a structured and progressive manner.

First, the use of flashcards, number charts, and daily drills is intended to strengthen pupils' ability to accurately recognize numbers. Through consistent exposure and repetition, learners are expected to gradually develop automatic number identification skills. Second, visual discrimination activities such as matching games and tracing exercises are included to reduce confusion between similar-looking numbers. These activities promote careful observation and improve cognitive processing of numerical symbols.

Third, the integration of educational games and interactive activities is designed to increase learners' motivation and engagement. Since young learners respond positively to play-based learning, this approach helps make number recognition more enjoyable and meaningful. Fourth, the inclusion of parental involvement through workshops and home-based activity sheets emphasizes the importance of reinforcing learning beyond the classroom. With consistent home support, pupils are more likely to retain and practice numeracy skills effectively.

Lastly, counting songs, number lines, and sequencing exercises are introduced to improve learners' understanding of number order. These activities provide multisensory learning experiences that enhance comprehension and retention.

Overall, the proposed action plan highlights a collaborative approach involving teachers, pupils, and parents. It emphasizes consistency, engagement, and reinforcement as key strategies in addressing number recognition difficulties. The implementation of this plan is expected to significantly improve

pupils' numeracy skills, confidence, and readiness for more advanced mathematical learning.

CONCLUSIONS AND RECOMMENDATIONS

Based on the findings of the study, the following conclusions are drawn:

1. Grade 1 pupils have varied levels of readiness and foundational numeracy exposure, which affects their ability to recognize numbers.
2. Learners' experiences in number recognition are highly dependent on teacher guidance and structured classroom activities.
3. Pupils encounter significant difficulties in identifying, sequencing, and distinguishing numbers, which hinder their numeracy development.
4. Multiple factors such as home support, instructional strategies, and learner readiness contribute to these difficulties.
5. Number recognition difficulties are not isolated issues but are influenced by interconnected home, school, and learner-related conditions.

Recommendations

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

1. **Teachers** should integrate more interactive and learner-centered strategies such as educational games, manipulatives, and multisensory activities to improve number recognition skills.
2. **School administrators** should provide training and seminars for teachers focusing on early numeracy instruction and intervention strategies for struggling learners.
3. **Parents and guardians** should be encouraged to actively participate in their children's learning by providing home-based numeracy activities and consistent reinforcement of number recognition.
4. **School intervention programs** such as remediation classes or numeracy enhancement sessions should be implemented for learners with identified difficulties.

FUTURE STUDY

Future researchers are encouraged to conduct similar studies in other schools or explore additional factors such as learning disabilities or instructional effectiveness to further deepen understanding of numeracy challenges.

ACKNOWLEDGMENT

The authors would like to express their sincere gratitude to the school administration, teachers, Grade 1 pupils, and parents of Sitio Tapayan Elementary School for their valuable cooperation and participation in this study. The authors also extend their appreciation to everyone who provided guidance, support, and assistance throughout the research process. Their contributions and cooperation were essential to the successful completion of this study.

REFERENCES

- Abbacan, M. A. D., Lasangen, J. P., Calado, Z. L. E. E. F., Catalino, F. G., & Terceño, R. T. (2025). Exploring the impact of educational games on numeracy skill development among the elementary learners: A systematic review. *Cognizance Journal*, 5(1), 274-286.
- Agaton, C. B., & Cueto, L. J. (2021). Learning at Home: Parents' Lived Experiences on Distance Learning during COVID-19 Pandemic in the Philippines. *International Journal of Evaluation and Research in Education*, 10(3), 901-911.
- Bernardo, A. B., Cordel, M. O., Lapinid, M. R. C., Teves, J. M. M., Yap, S. A., & Chua, U. C. (2022). Contrasting profiles of low-performing mathematics students in public and private schools in the Philippines: Insights from machine learning. *Journal of Intelligence*, 10(3), 61.
- Bringula, R., Reguyal, J. J., Tan, D. D., & Ulfa, S. (2021). Mathematics self-concept and challenges of learners in an online learning environment during COVID-19 pandemic. *Smart Learning Environments*, 8(1), 22.
- Cheung, S. K., Dulay, K. M., & McBride, C. (2020). Parents' characteristics, the home environment, and children's numeracy skills: How are they related in low-to middle-income families in the Philippines?. *Journal of Experimental Child Psychology*, 192, 104780.
- Dianito, A. J., Espinosa, J., Duran, J., & Tus, J. (2021). A glimpse into the lived experiences and challenges faced of PWD students towards online learning in the Philippines amidst COVID-19 pandemic. *International Journal Of Advance Research And Innovative Ideas In Education*, 7(1), 1206-1230.
- Fabito, B. S., Trillanes, A. O., & Sarmiento, J. R. (2020). Barriers and challenges of computing students in an online learning environment: Insights from one private university in the Philippines. *arXiv preprint arXiv:2012.02121*.
- Hijada Jr, M. V., & Cruz, M. D. (2022). The gap between comprehension level and problem-solving skills in learning mathematics.
- Idulog, M. V., Gadiano, R., Toledo, E., Hermosada, M., Casaldon, H., Mariposa, M., ... & Bautista, R. (2023). Filipino students' reading abilities: A note on the challenges and potential areas for improvement.
- Indefenso, E. E., & Yazon, A. D. (2020). Numeracy level, mathematics problem skills, and financial literacy. *Universal Journal of Educational Research*, 8(10), 4393-4399.
- Lagria, H., & Pañares, N. C. (2023). Difficulties in solving mathematical problems and pupils' performance. *International Journal of Research Publications*, 129(1), 380-391.
- Manlapas, C., & Bullo, M. (2021). Challenges and difficulties encountered by teachers in the conduct of educational research: Basis for teachers' enhancement program. *International Journal of Research Studies in Education*.
- Morales, C. G., Babatio, A. M., & Kim, A. S. (2025). Baseline assessment of kindergarten and grade 1 pupils with special needs in public school.

- Pariño, K. R., Canoy, M. V., & Augusto, M. I. (2025). NAVIGATING THE CHALLENGES: STUDENTS' SKILLS AND CONFUSION IN INTEGER OPERATIONS. *European Journal of Education Studies*, 12(12).
- Pentang, J. T., Ibañez, E. D., Subia, G. S., Domingo, J. G., Gamit, A. M., & Pascual, L. E. (2021). Problem-solving performance and skills of prospective elementary teachers in Northern Philippines. *Journal of Hunan University Natural Sciences*, 48(1).
- Robosa, J., Paras, N., Perante, L., Alvez, T., & Tus, J. (2021). The experiences and challenges faced of the public school teachers amidst the COVID-19 pandemic: A phenomenological study in the Philippines. *International Journal of Advance Research and Innovative Ideas in Education*, 7(1), 1342-1361.
- Tayaban, A. (2025). Exploring Challenges in Numeracy Skills of Kindergarten Learners in Ifugao, Philippines.
- Tomas, M. J. L., Villaros, E. T., & Galman, S. M. A. (2021). The perceived challenges in reading of learners: Basis for school reading programs. *Open Journal of Social Sciences*, 9(5), 107-122.
- Velez, A. J., Dayaganon, D. G., Robigid, J., Demorito, J., Villegas, J., & Gomez, D. (2023). Difficulties and coping strategies in understanding mathematical concepts in a private higher education in Tagum City, Davao del Norte, Philippines. *Davao Research Journal*, 14(1), 45-54.