

# Numerical Reasoning and Financial Literacy Readiness Among Grade 6 Learners

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Date Submitted:  
**February 25, 2026**

Date Accepted:  
**March 29, 2026**

Date Published:  
**April 23, 2026**

DOI:  
**10.5281/zenodo.19709441**

## ABSTRACT

This study addressed the growing need to understand how learners' mathematical thinking supports their preparedness for practical financial decision-making in the elementary years. Anchored in a quantitative readiness-mapping correlational design, it focused on Grade 6 learners of Cabecera 6 Elementary School in the City of Ilagan, Isabela. The investigation assessed numerical reasoning in terms of number sense, problem-solving ability, pattern recognition, and interpretation of numerical information, alongside financial literacy readiness in terms of money awareness, budgeting readiness, saving behavior, and responsible spending decisions. Data were obtained through a validated researcher-made instrument with an overall Cronbach's alpha of 0.91, indicating excellent internal

consistency. The findings showed that the learners manifested a moderate level of numerical reasoning and a moderate level of financial literacy readiness. Pattern recognition and money awareness emerged as relatively stronger areas, while interpretation of numerical information and budgeting readiness appeared as the most limited aspects. Readiness profiling further indicated that most learners fell within the developing readiness category. Canonical correlation analysis revealed a significant relationship between numerical reasoning and financial literacy readiness, suggesting that stronger reasoning skills were associated with better preparedness for basic financial choices. The results underscored the importance of integrating contextualized numeracy tasks into classroom instruction to strengthen both mathematical understanding and practical financial readiness among elementary learners.

**Keywords:** *numerical reasoning, financial literacy readiness, Grade 6 learners, budgeting readiness, contextualized numeracy, elementary mathematics*

## INTRODUCTION

Numerical reasoning is one of the most important foundations of meaningful learning because it allows learners to interpret quantities, recognize patterns, compare values, solve problems, and make practical decisions in daily life. For Grade 6 learners, numerical reasoning is especially important because they are already expected to move beyond basic computation and apply mathematical thinking to real situations. In the Philippine basic education context, this skill is closely connected with the goal of developing learners who can think critically, solve problems, and use mathematics in meaningful ways. The MATATAG Mathematics Curriculum emphasized that knowledge of numbers and the use of money are essential in daily activities such as budgeting, spending, saving, and earning, which are directly linked to the development of financial literacy (Department of Education [DepEd], 2023).

Financial literacy readiness refers to the learner's preparedness to understand and apply basic money concepts, including needs and wants, saving, budgeting, responsible spending, and simple financial decision-making. At the elementary level, financial literacy should not be viewed as an adult concept but as a practical life skill that can be developed through age-appropriate classroom experiences. The Organisation for Economic Co-operation and Development (2024) explained that financial literacy involves the ability to use financial knowledge, attitudes, and behaviors in making sound decisions, and recent findings show that many learners still need stronger preparation to apply financial knowledge in real-life situations.

The need to strengthen numerical reasoning and financial literacy readiness has become more urgent because international assessments continue to show learning gaps among Filipino learners. In PISA 2022, Filipino students obtained a mathematics score that remained below the OECD average, showing that many learners still experienced difficulty in applying mathematical knowledge to unfamiliar and practical contexts (OECD, 2023). Similarly, the World Bank noted that the Philippines continues to face a serious learning crisis, which affects the development of foundational competencies needed for higher learning and life readiness (World Bank, 2026). These findings suggest that schools must give greater attention not only to computational accuracy but also to learners' ability to reason, analyze, and use numbers in everyday decision-making.

Grade 6 learners are at a serious stage of preparation for junior high school. At this level, their ability to understand numerical relationships, solve word problems, interpret simple financial situations, and make practical judgments about money may influence their readiness for more complex academic and life tasks. While learners may be familiar with counting money or computing basic amounts, they may still need support in connecting these skills to budgeting, saving, comparing choices, and evaluating consequences. Thus, examining the relationship between numerical reasoning and financial literacy readiness can help teachers identify the specific learning areas that need reinforcement.

This study provides a localized understanding of how Grade 6 learners of Cabecera 6 Elementary School demonstrate numerical reasoning and financial literacy readiness. The study connects mathematics learning with practical life preparation. By determining learners' strengths and gaps, the study may serve as a basis for classroom interventions, contextualized learning activities, and school-based programs that promote both mathematical competence and responsible financial behavior.

## **Literature Review**

### ***Numerical Reasoning as a Foundation for Learning***

Numerical reasoning refers to the learner's ability to understand numbers, identify relationships among quantities, interpret mathematical situations, and apply logical thinking in solving problems. It goes beyond memorizing facts or performing basic operations because it requires learners to make sense of numerical information and use it in meaningful contexts. For Grade 6 learners, numerical reasoning is highly important because they are expected to solve multi-step problems, interpret data, compare values, estimate amounts, and explain mathematical processes. The Department of Education emphasized that learners must develop strong mathematical knowledge and understanding so they can become mathematically proficient and critical problem solvers (Department of Education [DepEd], 2023). This supports the idea that numerical reasoning should be developed not only as a classroom requirement but also as a life skill needed for everyday decisions.

The importance of numerical reasoning is also reflected in international learning assessments. The OECD (2023) reported that Filipino learners continued to perform below the OECD average in mathematics in PISA 2022, with the Philippines obtaining 355 points compared with the OECD average of 472 points. This result suggests that many Filipino learners still need stronger support in applying mathematical concepts to real-life problems.

### ***Financial Literacy Readiness Among Learners***

Financial literacy readiness refers to the preparedness of learners to understand basic financial concepts and apply them in simple but practical situations. These include recognizing needs and wants, budgeting limited resources, saving money, comparing choices, and making responsible spending decisions. The OECD (2024) defined financial literacy as the knowledge and understanding of financial concepts and risks, together with the skills, attitudes, and behaviors needed to make effective financial decisions. This definition shows that financial literacy is not limited to knowing money terms. It also includes the ability to use financial knowledge wisely.

In the Philippines, financial literacy has been recognized as an important learning area. DepEd issued its Financial Education Policy through DepEd Order No. 022, s. 2021 to promote financial literacy among learners, teachers, and personnel. This policy highlights the need to integrate financial education into the K to 12 curriculum so that learners can develop responsible financial habits at an early age.

### ***Relationship Between Numeracy and Financial Literacy***

Numerical reasoning and financial literacy are closely connected because financial decisions often require the use of mathematical thinking. A learner who can compare numbers, estimate totals, calculate differences, understand percentages, and interpret simple data is more likely to make sound decisions about money. OECD findings showed that students with better financial literacy skills tend to behave more responsibly, including saving money and comparing prices before buying (OECD, 2024). This means that financial literacy is strengthened when learners are able to use numerical reasoning in practical situations.

In elementary education, the connection between numeracy and financial literacy can be developed through contextualized activities such as budgeting a school allowance, comparing prices of school supplies, computing change, planning savings, and deciding between needs and wants. These activities help learners see mathematics not as an isolated subject but as a tool for daily living.

### ***Foundational Learning and Readiness for Practical Life Skills***

Foundational learning includes literacy, numeracy, and socio-emotional skills that support future learning and participation in society. The World Bank described foundational learning as the basis for lifelong learning, cognitive development, and productive participation in the future (World Bank, 2025). When learners have weak foundational skills, they may struggle not only in higher academic tasks but also in practical life situations that require decision-making. This is why numeracy development must be linked with real-life applications such as financial literacy.

The learning crisis in the Philippines further strengthens the need for studies focused on foundational competencies. The World Bank and other development partners have continued to emphasize that many learners in low- and middle-income countries face difficulty mastering basic learning skills by the end of primary school (World Bank, 2024).

### ***Classroom Instruction and Contextualized Financial Learning***

Classroom instruction plays a major role in helping learners connect numerical reasoning with financial literacy. Learners understand financial concepts better when these are taught through familiar situations, examples, and activities. The MATATAG Mathematics Curriculum emphasized logically sequenced and interconnected lessons so learners can learn deeply and flexibly (DepEd, 2023). This supports the use of contextualized teaching strategies where mathematics lessons are connected to real-life financial experiences.

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## METHODS

### Research Design

The study employed a quantitative readiness-mapping correlational design. This design was selected because the study did not only describe the learners' numerical reasoning and financial literacy readiness, but also mapped the strength of their connection across specific competency areas. It allowed the researcher to determine which aspects of numerical reasoning were most closely associated with learners' readiness to understand and apply basic financial concepts. This design was considered appropriate since the study focused on measurable learner responses and examined patterns that could serve as basis for instructional planning.

### Research Locale

The study was conducted at Cabeceria 6 Elementary School, located in the City of Ilagan, Isabela. The school served as the research setting because it provided a relevant elementary learning environment where Grade 6 learners were being prepared for higher academic demands and practical life skills. The locale was considered suitable because the study focused on learners' readiness in numerical reasoning and financial literacy within a public elementary school context.

### Participants and Sampling Technique

The participants of the study were the Grade 6 learners of Cabeceria 6 Elementary School. The researcher used total enumeration sampling, since all available Grade 6 learners who met the inclusion criteria were considered part of the study. This technique was appropriate because the target group was specific and manageable, and it allowed the researcher to obtain a fuller picture of the learners' readiness level without excluding eligible participants.

### Research Instrument

The study used a researcher-made questionnaire and assessment checklist composed of two major parts. The first part measured numerical reasoning in terms of number sense, problem-solving ability, pattern recognition, and interpretation of numerical information. The second part measured financial literacy readiness in terms of money awareness, budgeting readiness, saving behavior, and responsible spending decisions.

The instrument was validated by experts in mathematics education, elementary instruction, and research. Their comments were used to refine the wording, sequencing, and age-appropriateness of the items. A pilot test was conducted among learners who were not included in the final study. The reliability test produced an overall Cronbach's alpha coefficient of 0.91, which indicated excellent internal consistency. The numerical reasoning section obtained a reliability coefficient of 0.89, while the financial literacy readiness section obtained 0.92, showing that the tool was dependable for data gathering.

### Data Gathering

The researcher first secured permission from the concerned school authorities before the conduct of the study. After approval was granted, the purpose of the study was explained to the class adviser, parents, and learners. Consent and assent procedures were observed before the administration of the instrument. The questionnaire and assessment checklist were administered in a structured classroom setting to ensure clarity, order, and proper guidance. The learners were given enough time to answer the items independently. After retrieval, the responses were checked, coded, and prepared for statistical analysis.

### Data Analysis

The researcher first secured permission from the concerned school authorities before the conduct of the study. After approval was granted, the purpose of the study was explained to the class adviser, parents, and learners. Consent and assent procedures were observed before the administration of the instrument. The questionnaire and assessment checklist were administered in a structured classroom setting to ensure clarity, order, and proper guidance. The learners were given enough time to answer the items independently. After retrieval, the responses were checked, coded, and prepared for statistical analysis.

### Ethical Consideration

The study observed ethical standards in conducting research with elementary learners. Permission from school authorities was secured before data collection. Parental consent and learner assent were obtained to ensure voluntary participation. The learners were informed that their answers would be used only for research purposes and would not affect their grades or classroom standing. Confidentiality was maintained by not disclosing the names of the participants. The researcher also ensured that the items were age-appropriate, non-threatening, and aligned with the learners' level of understanding.

## RESULTS AND DISCUSSION

Table 1. *Level of Numerical Reasoning of Grade 6 Learners*

Indicators	Mean	SD	Qualitative Description
Number sense	3.18	0.61	Moderate
Problem-solving ability	2.89	0.67	Moderate
Pattern recognition	3.24	0.58	Moderate
Interpretation of numerical information	2.76	0.72	Moderate
Overall Mean	3.02	0.65	Moderate

*Legend: 3.26–4.00 = High, 2.51–3.25 = Moderate, 1.76–2.50 = Low, 1.00–1.75 = Very Low.*

The results show that the Grade 6 learners had a moderate level of numerical reasoning, with an overall mean of 3.02. Among the indicators, pattern recognition received the highest mean of 3.24, suggesting that learners were relatively more capable of identifying sequences, relationships, and repeated numerical structures. However, interpretation of numerical information obtained the lowest mean of 2.76, indicating that learners still struggled when numbers were presented in word problems, tables, simple graphs, or real-life contexts. This implies that while learners could perform basic numerical tasks, they still needed stronger support in applying reasoning to unfamiliar or practical situations.

Table 2. *Level of Financial Literacy Readiness of Grade 6 Learners*

Indicators	Mean	SD	Qualitative Description
Money awareness	3.31	0.55	Moderate
Budgeting readiness	2.74	0.70	Moderate
Saving behavior	3.08	0.63	Moderate
Responsible spending decisions	2.81	0.68	Moderate
Overall Mean	2.99	0.64	Moderate

*Legend: 3.26–4.00 = High, 2.51–3.25 = Moderate, 1.76–2.50 = Low, 1.00–1.75 = Very Low.*

The learners also showed a moderate level of financial literacy readiness, with an overall mean of 2.99. Money awareness received the highest mean of 3.31, which means that learners had basic familiarity with money, prices, and simple transactions. However, budgeting readiness obtained the lowest mean of

2.74. This suggests that learners found it difficult to plan how money should be divided, saved, or spent based on needs and priorities. The result reveals a practical learning gap because learners may know the value of money but may not yet be fully ready to manage it wisely.

Table 3. *Readiness Profile of Grade 6 Learners*

Readiness Category	Description	Percentage
High readiness	Demonstrated consistent reasoning and practical financial decision-making	18.00%
Developing readiness	Showed partial understanding but needed guidance in application	57.00%
Low readiness	Had difficulty interpreting numerical and financial situations	25.00%

The readiness profile shows that most learners belonged to the developing readiness category. This means that many learners had some understanding of numerical and financial concepts but still needed structured guidance, repeated practice, and contextualized activities. The presence of 25.00 percent in the low readiness group indicates a real concern, since these learners may have difficulty solving practical money-related problems, especially those involving budgeting, comparison of choices, and interpretation of numerical details.

Table 4. *Canonical Correlation Between Numerical Reasoning and Financial Literacy Readiness*

Canonical Function	Canonical Correlation	Wilks' Lambda	F-value	p-value	Interpretation
Function 1	0.68	0.54	4.92	0.002	Significant
Function 2	0.39	0.82	2.11	0.071	Not Significant

The canonical correlation result shows that the first function was significant, with a canonical correlation of 0.68 and a p-value of 0.002. This indicates a substantial relationship between the set of numerical reasoning indicators and the set of financial literacy readiness indicators. In particular, learners who had better number sense, problem-solving ability, pattern recognition, and interpretation of numerical information also tended to show better readiness in money awareness, saving, budgeting, and responsible spending. However, the second function was not significant, which means that only one strong shared pattern explained the relationship between the two major variables.

Table 5. *Dominant Contributors to the Significant Canonical Function*

Variable Set	Indicator	Canonical Loading	Contribution
Numerical Reasoning	Interpretation of numerical information	0.79	Strong
Numerical Reasoning	Problem-solving ability	0.74	Strong
Numerical Reasoning	Number sense	0.63	Moderate
Numerical Reasoning	Pattern recognition	0.58	Moderate
Financial Literacy Readiness	Budgeting readiness	0.82	Strong
Financial Literacy Readiness	Responsible spending decisions	0.77	Strong
Financial Literacy Readiness	Saving behavior	0.66	Moderate
Financial Literacy Readiness	Money awareness	0.51	Moderate

The strongest contributors to the relationship were interpretation of numerical information and problem-solving ability on the numerical reasoning side, and budgeting readiness and responsible spending decisions on the financial literacy side. This means that learners' difficulty in understanding numerical information in context was closely connected to their difficulty in making practical financial decisions. The result suggests that financial literacy readiness cannot be developed through money concepts alone. It must

be supported by mathematical reasoning tasks that require learners to analyze, compare, estimate, and justify decisions.

The findings reveal that the Grade 6 learners of Cabecera 6 Elementary School had developing but not yet strong readiness in both numerical reasoning and financial literacy. The main problem was not simple awareness of numbers or money, but the application of these skills in practical situations. This indicates the need for contextualized classroom activities such as budgeting school allowance, comparing prices, planning savings, interpreting receipts, and solving real-life financial word problems.

## CONCLUSION

The Grade 6 learners of Cabecera 6 Elementary School had a moderate level of numerical reasoning and financial literacy readiness, showing that they possessed basic understanding but still needed stronger support in applying numbers to practical financial situations. The findings revealed that learners were more capable in recognizing patterns and identifying basic money concepts, but they encountered difficulty in interpreting numerical information, solving contextual problems, preparing simple budgets, and making responsible spending decisions. The significant relationship between numerical reasoning and financial literacy readiness further indicated that learners who reasoned better with numbers were also more prepared to handle basic financial decisions. Therefore, it is recommended that teachers integrate contextualized numeracy activities into Mathematics lessons, such as budgeting school allowance, comparing prices, computing change, planning savings, and solving real-life financial word problems. The school may also develop simple financial literacy enrichment activities for Grade 6 learners, while parents may be encouraged to involve children in age-appropriate money decisions at home. Future researchers may conduct a similar study using intervention-based or mixed-method approaches to further examine how classroom strategies can improve learners' financial literacy readiness.

## References

- Department of Education. (2021, July 8). *DepEd expands financial education in K to 12 to improve literacy of Filipinos*. Department of Education.
- Department of Education. (2021). *Financial education policy* (DepEd Order No. 022, s. 2021). Department of Education.
- Department of Education. (2024). *MATATAG curriculum: Mathematics, Grades 1, 4 and 7*. Department of Education.
- Organisation for Economic Co-operation and Development. (2023). *PISA 2022 results (Volume I and II): Country note, Philippines*. OECD Publishing.
- Organisation for Economic Co-operation and Development. (2024). *PISA 2022 results (Volume IV): How financially smart are students?* OECD Publishing.
- World Bank. (2024). *Philippines learning poverty brief*. World Bank.
- World Bank. (2025, May 16). *Foundational learning*. World Bank.
- World Bank. (2026, April 3). *World Bank backs better learning for 21 million Filipino students*. World Bank.