

Challenges and Strategies in Improving Numeracy for Grade V Students at SDN 4 Selat, Singaraja

Kadek Erik Apriliawan^{1*}, I Nyoman Shindu Yasa², I Putu Agus Andika Putra³, Katarina Ni Made Sonia Putri Wulandari⁴, Ketut Arini⁵, Basilius Redan Werang⁶

Universitas Pendidikan Ganesha, Indonesia

Corresponding Author: Kadek Erik Apriliawan kadekerik2003@gmail.com

ARTICLE INFO

Keywords: Challenges, Strategy, Numeracy

Received: 06, June

Revised : 20, June

Accepted: 18, July

©2024 Apriliawan, Yasa, Putra, Wulandari, Arini, Werang: This is an open-access article distributed under the terms of the [Creative Commons Attribution 4.0 International](https://creativecommons.org/licenses/by/4.0/).



ABSTRACT

This article aims to explore the challenges faced and the strategies implemented in improving the numeracy of class V students at SDN 4 Selat, Singaraja. With a qualitative approach, data is collected through in-depth interviews, classroom observations, and document analysis. The research results highlight several main challenges, such as limited educational resources, variations in student ability levels, lack of teacher training, non-conducive learning environments, and the digital divide. Strategies implemented to overcome these challenges include resource development, differential learning approaches, teacher training, improved learning environments, technology integration, and collaboration with parents. Thus, this research provides an in-depth understanding of the dynamics of numeracy at SDN 4 Selat and provides insight into the development of more effective mathematics education at the elementary school level.

INTRODUCTION

In many countries, education is considered a basic right that should be accessed by all people regardless of social, economic, or geographic background. Governments and educational institutions work hard to ensure that all children have the opportunity to learn and develop, recognizing that investment in education is an investment in the nation's future. The education system continues to develop to adapt to changing times and societal needs. In this digital era, technology has brought about a major transformation in the way education is delivered. Traditional learning methods that include face-to-face teaching in the classroom are now enriched with the use of digital media, online learning and online resources. Technology not only expands access to education, but also allows for more flexible and personalized learning according to the needs of each student (Yusuf, M. (2023)).

Education also plays an important role in reducing social and economic disparities. Access to quality education can help individuals from disadvantaged backgrounds to improve their lives and contribute positively to society. Inclusive and equitable education can be a powerful tool for achieving social and economic justice, reducing poverty, and strengthening sustainable development. Therefore, many countries focus on improving access and quality of education in remote areas and for marginalized groups (Mubarak, F. (2023)). Apart from that, education also plays a role in forming character and moral values. Through a well-designed curriculum, students not only learn academic subjects, but also develop attitudes, ethics, and important social skills. Character education is an integral part of the learning process, helping students to become individuals who are responsible, ethical and care for others. This comprehensive education aims to produce graduates who are not only academically intelligent, but also ready to face real world challenges with integrity and self-confidence (Hayati, N., Amaliyah, N., & Kasanova, R. (2023)).

Primary school education is a fundamental stage in the education system that functions as the main foundation for children's academic and character development. At this level, students are introduced to the basic knowledge and skills that will become students' knowledge for further education. Elementary school not only focuses on mastering reading, writing and arithmetic skills, but also includes the development of social, emotional and moral skills which are very important for the formation of a child's character. Primary school education is considered a basic right that all children should have access to. Governments and international organizations such as UNICEF and UNESCO work together to ensure that every child, regardless of social, economic or geographic background, has access to quality basic education. These efforts include providing adequate facilities, teacher training, and a relevant and inclusive curriculum. Strong basic education can help reduce social and economic disparities, as well as open up greater opportunities for children to continue their education to a higher level (Anggraena, Y., et al (2022)).

The importance of primary school education is also reflected in various national policies that support compulsory education. In Indonesia, for example, the 9 Year Compulsory Education program includes basic education as a

strategic step to ensure all children receive adequate basic education. The Indonesian government continues to strive to improve the quality of basic education through various initiatives, including improving school infrastructure, developing a more relevant curriculum, and improving the quality of teaching staff through various training and certification programs (Nurchaya, A., Qurtubi, A., & Fauzi, A. (2024)). The role of technology in elementary school education is increasing along with the times. The use of digital devices and the internet in the learning process has opened up various new opportunities to enrich students' learning experiences. Technology allows access to a wider range of learning resources and more interactive learning methods. However, challenges also arise related to the digital divide which needs to be overcome so that all students, including those in remote areas, can feel the benefits of this technological development (Rahayu, IT, et al (2023)).

Numeracy, or the ability to understand and use mathematical concepts in everyday life, is a very important basic skill for every individual. Numeracy includes the ability to perform simple calculations, understand size and proportion, and interpret statistical data. Good numeracy skills are not only important in an academic context, but also in various aspects of everyday life, such as managing personal finances, understanding health information, and making decisions based on data. Numeracy education starts from an early age and continues throughout primary to secondary education (Sa'adah, A., Ningrum, FZ, & Farikha, N. (2021, January)). In the early stages, children are introduced to basic concepts such as numbers, basic mathematical operations (addition, subtraction, multiplication, and division), and measurement. Effective numeracy education helps children develop problem-solving and critical thinking skills, which are essential for their academic success and daily life (Setyani, NH, Handayani, A., & Rahmawati, D. (2023)).

Research conducted by Livia Mutiara Shabrina (2022) entitled Teaching Campus Activities in Improving Literacy and Numeracy Skills of Elementary School Students The teaching campus program is one of the government programs to realize MBKM (Merdeka Belajar - Kampus Merdeka) activities. This program is intended for students from all study programs in higher education to contribute to advancing basic education, especially in 3T areas. The teaching campus activities include: literacy and numeracy activities, technology adaptation and school administration. Based on this, the purpose of the research conducted is to see the development of numeracy literacy skills of grade II students in an elementary school in Sumedang Regency which has its own obstacles and challenges in the process of improving literacy and numeracy skills. The research method used was descriptive qualitative with the researcher acting as an observer. The results showed that grade II students were very interested in learning using learning media and learning methods carried out in groups made learning very effective so that the development of skills and numeracy there was an increase in the group of students not fluent in reading and getting better in the group of students who were fluent in reading.

Improving numeracy skills is one of the main focuses in the education system. Various policies and programs have been launched to improve the

quality of mathematics education in schools. For example, the Indonesian Ministry of Education and Culture has implemented a curriculum that integrates numeracy learning with real-life contexts to make learning more relevant and interesting for students. Teacher training programs are also in place to ensure educators have the skills and knowledge necessary to teach numeracy effectively. However, challenges in increasing numeracy still exist. Many students face difficulty understanding mathematical concepts, which can lead to math anxiety and lower academic performance. Gaps in access to quality educational resources, including books and educational technology, are also a significant obstacle, especially in remote areas (Fridiyanto, F., et al (2022)). Therefore, collaborative efforts between governments, schools and communities are essential to overcome these challenges.



Figure 1
Location of SDN 4 Selat, Singaraja

Figure 1 shows the location of SD Negeri 4 Selat which is located in Singaraja, precisely at R3C5+VJX, SD Negeri 4 Selat, Selat Village, Sukasada District, Buleleng Regency, Bali 81161. This school is in an area surrounded by beautiful natural scenery typical of Bali, with good road access to the school area. The school building looks beautiful with shades of green that dominate the surrounding environment, reflecting a comfortable atmosphere that is conducive to teaching and learning activities. Located in a rural area, SD Negeri 4 Selat is a center for basic education for children in Selat Village and its surroundings, playing an important role in forming the younger generation with strong basic knowledge.

Numeracy is a very important basic skill for students, especially at the elementary school level. At SDN 4 Selat, Singaraja, developing the numeracy skills of class V students is one of the main focuses in efforts to improve the quality of education. However, there are various challenges faced in this process. Some of these include limited resources, differences in students' levels of understanding, and less supportive learning environments. Overcoming these challenges requires effective and well-planned strategies. One of the main challenges faced by SDN 4 Selat is limited resources, both in the form of learning materials and supporting facilities. Often, the available teaching

materials are not enough to stimulate students' interest and understanding of mathematics. Apart from that, access to educational technology that can help the numeracy learning process is still limited. This makes teachers have to be more creative in using existing resources to make mathematics learning more interesting and easy to understand.

Another challenge is the difference in the level of understanding of numeracy between students. Class V students at SDN 4 Selat come from diverse backgrounds, with varying academic abilities. Some students may already understand basic math concepts well, while others still struggle with the basics. These differences mean that teachers must be able to adapt their teaching methods to meet the individual needs of each student, which of course increases the workload and requires more personalized and differential teaching strategies. To overcome these challenges, SDN 4 Selat has implemented various strategies. First, schools try to improve the quality of teaching by holding regular training for teachers to develop innovative and effective teaching methods. This training covers the use of technology in learning, student-focused teaching methods, as well as ways to make mathematics learning more interesting and relevant to everyday life.

Schools are also working to provide more learning resources. Through collaboration with the local government and related parties, SDN 4 Selat is trying to get assistance in the form of books, teaching aids and technological devices that can support the teaching and learning process. Apart from that, schools also encourage the use of digital media and learning applications that can be accessed by students to enrich their learning experience. Apart from that, a collaborative approach between teachers, students and parents is also key in increasing student numeracy. Teachers at SDN 4 Selat hold regular communication sessions with parents to provide reports on student learning progress and discuss ways to support learning at home. Involving parents in their children's education process can help create a learning environment that is more supportive and motivates students to study harder.

Overall, efforts to increase the numeracy of class V students at SDN 4 Selat require hard work and a well-coordinated strategy. By facing challenges head-on and implementing appropriate solutions, schools hope to improve students' numeracy abilities and equip them with the basic skills necessary for success at the next level of education and in everyday life.

LITERATURE REVIEW

The Concept of Numeracy

Numeracy is the ability to understand and use various kinds of numbers and symbols related to basic mathematics to solve practical problems in various contexts of daily life. Simply put, numeracy is about our ability to count and use numbers intelligently (Noviantini, NMH (2023)).

More Than Just Basic Mathematics

Numeracy is not just about memorizing formulas and solving math problems. Numeracy involves a variety of skills, such as:

- a) Understand number concepts: This includes understanding place value, intrinsic value, relationships between numbers, and basic operations such as addition, subtraction, multiplication, and division.
- b) Reading and writing numbers: This includes reading and writing numbers in various forms, such as Arabic numerals, Roman numerals, and fractions.
- c) Analyzing quantitative information: This includes understanding graphs, tables, charts, and statistics.
- d) Solving problems: This includes using numeracy to solve problems in a variety of contexts, such as shopping, cooking, and travelling.

Benefits of Numeracy

Numeracy is an important skill needed in various aspects of life. Numeracy helps us to:

- a) Make informed decisions: Numeracy allows us to analyze quantitative information and make informed decisions in a variety of situations, such as finances, health, and education.
- b) Participating in society: Numeracy is necessary to understand information presented in the media, such as news, advertisements, and government reports.
- c) Thriving in the world of work: Numeracy is required in almost all jobs, from entry-level jobs to professional positions.

Improve Numeracy Ability

Everyone can improve their numeracy skills. Here are some tips:

- Practice regularly: The more often students use numeration, the better their abilities. Try to incorporate numeracy into Students' daily activities, such as shopping, cooking and traveling.
- Learn from mistakes: Don't be afraid to make mistakes. Mistakes are part of the learning process. The most important thing is that students learn from students' mistakes and continue to practice.
- Use available resources: There are many resources available to help students improve their numeracy skills, such as books, websites, and apps.
- Ask for help: If Students are having difficulty, don't hesitate to ask teachers, parents or tutors for help.

Numeracy is an important skill that can help students achieve success in life. With dedication and effort, students can improve their numeracy skills and utilize its benefits in various aspects of life.

The Challenges and Strategies in Improving Student Numeracy

Challenges in Improving Student Numeracy

1. Limited Educational Resources: Many schools, especially in remote areas such as SDN 4 Selat, Singaraja, face limitations in terms of educational resources. Lack of textbooks, teaching aids, and access to educational technology can hinder the numeracy learning process. Without adequate resources, teachers often struggle to provide interesting and relevant material for students.

2. **Varying Student Ability Levels:** Students in the same class often have very varying levels of understanding of numeracy concepts. There are students who catch on quickly, while others may need more time and attention. These differences add to the complexity of teaching, because teachers must adapt learning methods and tempo to suit the needs of each student.
3. **Lack of Teacher Training:** Teachers are key in the educational process, but not all teachers have access to adequate training to teach numeracy with effective methods. Lack of training and professional development can result in a lack of innovation in teaching, so that numeracy learning becomes less interesting and effective.
4. **Unsupportive Learning Environment:** Physical conditions and classroom atmosphere that are not conducive can disrupt the teaching and learning process. Classes that are too crowded, have minimal ventilation, or do not have adequate basic facilities can make it difficult for students to concentrate and less motivated to learn.
5. **Digital Divide:** While technology can be an effective tool in numeracy learning, not all students have the same access to devices and internet connectivity. This digital divide can create inequalities in learning opportunities among students.

Strategies to Improve Student Numeracy

1. **Resource Development and Utilization:** To overcome limited resources, schools can seek support from the government, non-profit organizations, and local communities. Donations of books, teaching aids, and technology devices can be very helpful. In addition, teachers can take advantage of digital resources that are freely available on the internet as additional learning materials.
2. **Differential Learning Approach:** Teachers need to implement learning strategies that can adapt to individual student needs. This approach involves creating small study groups based on students' ability levels, so that each group can receive attention and materials appropriate to their learning pace.
3. **Teacher Training and Professional Development:** Improving the quality of numeracy teaching requires investment in teacher training and professional development. Training programs that focus on innovative teaching methods, use of technology in the classroom, and classroom management strategies can help teachers improve their skills.
4. **Creating a Conducive Learning Environment:** Efforts to improve the physical conditions of classrooms and create a positive learning atmosphere are very important. This includes better classroom layouts, the use of attractive colors, and maintaining the cleanliness and comfort of classrooms.
5. **Technology Integration in Learning:** Utilizing technology for numeracy learning can make the learning process more interactive and interesting. The use of learning applications, video tutorials and educational games can help students understand mathematical concepts in a more enjoyable

way. Apart from that, schools need to collaborate with parties who can provide access to technology for students who need it.

6. Collaboration with Parents: Involving parents in the child's educational process can provide additional support for students. Teachers can hold regular meetings with parents to discuss their child's learning progress and provide suggestions on how to help their child learn at home.

By identifying and overcoming these challenges through appropriate strategies, schools can improve students' numeracy skills. These efforts will not only help students achieve better academic performance, but also equip them with the basic skills necessary for success in everyday life.

Theories regarding the development of numeracy in children

The development of numeracy in children is an important part of cognitive development which has been widely studied by experts. Here are some of the main theories that explain how children develop numeracy skills:

1) Piaget's Theory of Cognitive Development

Jean Piaget, a Swiss psychologist, developed a theory of cognitive development that has been very influential in understanding how children learn and develop. According to Piaget, children's cognitive development occurs through a series of different stages (Nainggolan, AM, & Daeli, A. (2021)) :

- Sensorimotor Stage (0-2 years): In this stage, children begin to understand the world through physical actions and sensory experiences. Numeracy abilities are not yet developed, but the basics of understanding objects and numbers are beginning to form.
- Preoperational Stage (2-7 years): Children begin to use symbols, such as words and pictures, to represent objects. They begin to understand basic concepts such as numbers and quantities, but their understanding is still limited to physical appearance and is often illogical.
- Concrete Operational Stage (7-11 years): At this stage, children begin to understand more complex mathematical concepts and can perform mental operations such as addition and subtraction with the help of concrete objects.
- Formal Operational Stage (11 years and above): Children begin to think abstractly and logically. They can understand more complex mathematical concepts without the need for physical objects.

2) Information Processing Theory

This theory views cognitive development as a process similar to how computers process information. The main focus of this theory is how children (Zulfah, SA, & Mukhoiyaroh, M. (2022)):

- Storing and Accessing Information: Children learn to develop strategies for storing numerical information in short-term memory and accessing it when needed.

- Problem Solving: Children learn to use algorithms and heuristics to solve math problems. It involves developing mental strategies to perform arithmetic operations.
- 3) Bandura's Social Learning Theory
- Albert Bandura emphasized the importance of observation, imitation, and models in learning (Eve, S. (2020)):
- Observation and Imitation: Children learn numeracy by observing others (e.g., teachers or parents) and imitating the way they solve math problems.
 - Reinforcement and Feedback: Children also learn from the positive reinforcement and feedback they receive after trying to solve math problems. Positive reinforcement encourages them to keep trying and developing their skills.

Numeracy development in children is a complex process and is influenced by various factors, including stages of cognitive development, social interactions, and the learning strategies used. These theories provide a framework for understanding how children learn mathematics and how we can support them in the process. By understanding these theories, educators and parents can design more effective learning strategies to improve children's numeracy skills.

METHODOLOGY

Research Methods

This research uses a qualitative descriptive research method. This method was chosen to understand in depth the challenges and strategies faced in improving the numeracy of class V students at SDN 4 Selat, Singaraja. Qualitative descriptive research allows researchers to explore the perceptions, experiences and views of teachers, students and parents regarding numeracy learning. Data collection was carried out through in-depth interviews, classroom observations, and document analysis.

Population and Sample

- a. Population: The population in this study were all class V students, teachers who taught in class V, and parents of students at SDN 4 Selat, Singaraja.
- b. Sample: The sample was taken by purposive sampling to obtain richer and more relevant information. The sample consists of:
 - 30 class V students at SDN 4 Selat.
 - 2 teachers who teach mathematics in class V.
 - 10 parents of fifth grade students.

Purposive sampling was chosen to ensure the participants involved had knowledge and experience relevant to the research topic.

Data Analysis Tools

Data analysis in the study "Challenges and Strategies in Improving the Numeracy of Grade V Students at SDN 4 Selat, Singaraja" used several tools to

gain a comprehensive understanding. Firstly, in-depth interviews were used to gather information from teachers and parents regarding the challenges faced in improving student numeracy, as well as the strategies they have implemented. Direct observation in class V was conducted to examine the numeracy learning process, record the interaction between teachers and students, and observe the learning strategies used firsthand. In addition, document analysis involved examining lesson plans, student assignments, and numeracy evaluation results to understand more deeply how numeracy materials are taught and assessed.

The data collected was then analyzed using thematic analysis techniques. This process involved coding the data to identify key patterns and themes that emerged from the interviews, observations, and documents. These themes were then organized into a clear and in-depth narrative of the challenges faced by the school in improving the numeracy of grade V students and which strategies were effective in overcoming these challenges. Thematic analysis allows the researcher to present the research results in a systematic and comprehensive way, describing in detail the dynamics of numeracy learning at SDN 4 Selat.

Research Procedures

- a. Research Preparation:
 - Prepare a research proposal and obtain research permission from the school and ethics committee.
 - Develop research instruments, including interview guides and observation sheets.
- b. Data collection:
 - In-depth Interview: Conduct interviews with students' teachers and parents. Each interview lasted 30–60 minutes and was recorded with the participant's permission.
 - Class Observation: Conducting observations during several numeracy learning sessions in class V. Observations focused on teaching methods, interactions between teachers and students, and the use of learning resources.
 - Document Analysis: Collect and analyze lesson plans, student worksheets, and evaluation results to understand the approaches used in teaching numeracy.
- c. Data analysis:
 - Transcribe interviews and organize observation data and documents.
 - Carry out data coding to identify the main themes that emerge regarding challenges and strategies in numeracy learning.
 - Develop a thematic narrative that describes the results of the analysis.
- d. Results Reporting:
 - Prepare research reports that include background, methodology, research results, and recommendations.

- Share research results with schools and related parties to be used as a basis for decision making and improving numeracy learning strategies.

RESEARCH RESULT

Challenges in Improving Student Numeracy

Limited Educational Resources, one of the main challenges identified is limited educational resources. Teachers at SDN 4 Selat reported that they often lacked adequate teaching materials such as textbooks and teaching aids. In addition, limited technological facilities hinder the use of technology-based learning methods that can make mathematics lessons more interesting and interactive.

Variations in Ability Levels Students and teachers also face challenges in teaching classes with very diverse abilities. Some students have a good understanding of basic math concepts, while others still struggle with simpler concepts. These differences make it difficult for teachers to adjust the pace and teaching methods that suit all students.

Lack of Teacher Training, teachers feel that they need more training and professional development to teach numeracy more effectively. Many of them are not familiar with the latest teaching methods and innovative techniques that can improve student understanding.

Unsupportive Learning Environment, the physical condition of the classroom which is not always conducive is also an obstacle. Crowded classes, minimal ventilation, and lack of basic facilities create an uncomfortable learning atmosphere, which can affect student concentration and motivation.

The Digital Divide, unequal access to technology in students' homes creates gaps in learning. Students who do not have access to digital devices or the internet at home have limitations in utilizing additional technology-based learning resources.

Strategies to Improve Student Numeracy

Resource Development and Utilization, to overcome limited resources, SDN 4 Selat has collaborated with local governments and non-profit organizations to obtain donations of books, teaching aids and technological devices. Teachers also take the initiative to create creative teaching materials using materials available around the school.

Differential Learning Approach, teachers apply a differential learning approach by dividing students into small groups based on their ability level. Each group receives attention and teaching methods tailored to their needs, so that all students can learn at an appropriate pace.

Teacher Training and Professional Development, schools hold regular training for teachers, which includes the use of technology in learning, active learning strategies, and classroom management. Teachers are trained to use digital tools and mathematics learning applications to increase student interaction and engagement.

Creating a Conducive Learning Environment, efforts to improve the physical condition of classrooms are carried out by improving classroom layout, ensuring cleanliness and comfort, and using attractive decorations to create a positive learning atmosphere. Teachers also apply good classroom management techniques to maintain student discipline and focus.

Integration of Technology in Learning, the use of technology is the main focus in learning strategies. Teachers use mathematics learning applications and video tutorials to help students understand mathematics concepts in a more visual and interactive way. The school is also working to provide access to digital devices for students who need them through loan programs.

Collaborating with Parents, teachers hold regular meetings with parents to report on children's learning progress and provide suggestions on how to support learning at home. Parents are invited to play an active role in their children's education process by providing a supportive learning environment at home.

DISCUSSION

This research shows that SDN 4 Selat faces various challenges in improving the numeracy of grade V students, including limited resources, variations in students' abilities and unfavorable learning environment conditions. However, by implementing appropriate strategies such as resource development, differentiated learning, teacher training, learning environment improvement, technology integration and collaboration with parents, the school was able to overcome these challenges and improve students' numeracy skills. The implementation of these strategies showed positive results, with increased student motivation and understanding of mathematics, as well as increased active participation in the learning process.

Research conducted by Livia Mutiara Shabrina (2022) entitled Teaching Campus Activities in Improving Literacy and Numeracy Skills of Elementary School Students The results showed that grade II students were very interested in learning using learning media and learning methods carried out in groups made learning very effective so that the development of skills and numeracy there was an increase in the group of students not fluent in reading and getting better in the group of students who were fluent in reading.

Both studies highlighted the challenges of improving students' numeracy skills in primary schools, but with different contexts and approaches. The first study at SDN 4 Selat focused on challenges such as limited resources and unsupportive learning environments and emphasized the importance of strategies such as resource development, differential learning and teacher training to overcome these issues. The results showed an increase in students' motivation and understanding of mathematics. Meanwhile, Livia Mutiara Shabrina's research (2022) conducted in Sumedang district highlighted the role of the Teaching Campus program in improving the literacy and numeracy skills of grade II students, with a media-based learning approach and group methods that proved effective. Both studies show that with the right strategies and innovative

approaches, challenges in improving numeracy skills can be overcome, resulting in increased student participation and ability.

CONCLUSIONS AND RECOMMENDATIONS

Conclusion

This research reveals a number of challenges faced in efforts to increase the numeracy of class V students at SDN 4 Selat, Singaraja. These challenges include limited educational resources, variations in student ability levels, lack of teacher training, unsupportive learning environments, and the digital divide. Nonetheless, various strategies have been implemented to overcome these challenges, including resource development, differential learning approaches, teacher training, improved learning environments, technology integration, and collaboration with parents.

Recommendation

Based on the findings in this research, several recommendations can be proposed to increase the effectiveness of efforts to increase the numeracy of class V students at SDN 4 Selat, Singaraja:

1. **Strengthening Educational Resources:** Schools need to continue to seek support from the government, non-profit organizations, and the community to increase the availability of educational resources such as textbooks, teaching aids, and technological devices.
2. **Improved Teacher Training:** Investment in teacher training and professional development is needed to improve their ability to teach numeracy with innovative and effective methods.
3. **Improvement of the Learning Environment:** Efforts must continue to be made to create a conducive learning environment by improving the physical facilities of classrooms and ensuring a comfortable and enjoyable learning atmosphere for students.
4. **Technology Integration in Learning:** Schools need to expand students' access to technology and increase the use of technology in learning to make mathematics learning more interesting and interactive.
5. **Collaboration with Parents:** It is important to continue to involve parents in the child's education process by providing clear information about the child's learning progress and providing support in learning at home.

By implementing these recommendations, it is hoped that SDN 4 Selat, Singaraja, can be more effective in improving the numeracy of class V students and provide a solid foundation for their academic progress.

ADVANCED RESEARCH

Although this research provides valuable insight into the challenges and strategies in improving the numeracy of grade V students at SDN 4 Selat, Singaraja, there are still several areas that can be researched further to gain a deeper understanding. Here are some suggestions for further research:

1. **Longitudinal Studies:** Research can be conducted over a longer period of time to evaluate the long-term impact of certain strategies in improving

students' numeracy. This will allow researchers to track students' numeracy development over time and identify factors that influence that development.

2. **Comparative Study:** Research can compare the effectiveness of various strategies in increasing student numeracy, both those that have been implemented at SDN 4 Selat and at other schools. This study can help understand the differences in learning outcomes between various strategies and identify the advantages and disadvantages of each.
3. **Qualitative Analysis:** Qualitative research can be conducted to gain a deeper understanding of the experiences of teachers, students, and parents in facing numeracy challenges and implementing specific strategies. Interviews and direct observation can be used to explore the perceptions, challenges and benefits associated with various strategies in improving student numeracy.
4. **Studies on Curriculum Integration:** Research can focus on how strategies to improve numeracy can be integrated into existing curricula. This involves identifying numeracy standards that can be met through specific strategies as well as developing integrated teaching strategies and relevant content in the curriculum.

By conducting further research in this area, it is hoped that a more comprehensive understanding of the challenges and strategies in improving the numeracy of class V students at SDN 4 Selat, Singaraja, and the implications for educational practice can be obtained.

ACKNOWLEDGMENT

The authors would like to thank all parties who have contributed and supported in completing research on Challenges and Strategies in Improving Numeracy for Class V Students at SDN 4 Selat, Singaraja. Thank you to the teachers, students and administrative staff at SDN 4 Selat for their willingness and cooperation in this research process. Appreciation is also expressed to colleagues who have provided valuable input and suggestions for the preparation of this report. Finally, all contributions and assistance provided were invaluable in completing this research successfully.

REFERENCES

- Anggraena, Y., Felicia, N., Eprijum, D., Pratiwi, I., Utama, B., Alhapip, L., & Wideaswati, D. (2022). *Kajian akademik kurikulum untuk pemulihan pembelajaran*.
- Fridiyanto, F., Purwaningrum, S., Abdullah, A. R., Rosi, F., Haryanto, T., Farih, A., ... & Setyawan, C. E. (2022). *Merdeka Belajar Dan Kampus Merdeka*.

- Hawa, S. (2020). Peran guru sebagai role model menurut konsep Albert Bandura dalam menerapkan Kurikulum 2013. *JURNAL AZKIA: Jurnal Aktualisasi Pendidikan Islam*, 15(1).
- Hayati, N., Amaliyah, N., & Kasanova, R. (2023). Menggali Potensi Kreativitas Dan Inovasi: Peran Pendidikan Karakter Di MTS Miftahus Sudur Campor Proppo. *Dewantara: Jurnal Pendidikan Sosial Humaniora*, 2(3), 111-128.
- Mubarak, F. (2023). PEMERATAAN AKSES PENDIDIKAN ISLAM PERSPEKTIF SOSIOLOG: META ANALISIS PENDEKATAN EMILE DUREKHEIM, MAX WEBER, GEORGE HERBERT MEAD, LOUIS ALTHUSSER, DAN IBNU KHALDUN. *Andragogi: Jurnal Ilmiah Pendidikan Agama Islam*, 5(1), 11-33.
- Nainggolan, A. M., & Daeli, A. (2021). Analisis teori perkembangan kognitif Jean Piaget dan implikasinya bagi pembelajaran. *Journal of Psychology Humanlight*, 2(1), 31-47.
- Noviantini, N. M. H. (2023). *Pengembangan Instrumen Asesmen Kompetensi Minimum untuk Mengukur Kemampuan Numerasi Siswa SMP Kelas VII* (Doctoral dissertation, Universitas Pendidikan Ganesha).
- Nurchahya, A., Qurtubi, A., & Fauzi, A. (2024). KEBIJAKAN PENDIDIKAN DASAR (WAJIB BELAJAR SEMBILAN TAHUN). *Tadbir: Jurnal Manajemen Pendidikan Islam*, 12(1), 83-105.
- Rahayu, I. T., Pramuswari, M. F., Santya, M., Oktariani, R., & Fatimah, S. (2023). ANALISIS HASIL PENGARUH PERKEMBANGAN IPTEK TERHADAP HASIL BELAJAR SISWA SD/MI. *HYPOTHESIS: Multidisciplinary Journal Of Social Sciences*, 2(01 Juni), 97-110.

- Sa'adah, A., Ningrum, F. Z., & Farikha, N. (2021, January). Scaffolding dalam pembelajaran trigonometri berbantuan soal HOTS untuk meningkatkan kemampuan literasi numerasi matematika. In *ProSANDIKA UNIKAL (Prosiding Seminar Nasional Pendidikan Matematika Universitas Pekalongan)* (Vol. 2, pp. 167-174).
- Setyani, N. H., Handayani, A., & Rahmawati, D. (2023). Pengembangan keterampilan numerasi dan kemampuan kognitif pada anak usia dini melalui media pembelajaran menggunakan bahan alam. *Jurnal Insan Pendidikan Dan Sosial Humaniora*, 1(3), 55-73.
- Yusuf, M. (2023). Inovasi Pendidikan Abad-21: Perspektif, Tantangan, dan Praktik Terkini.
- Zulfah, S. A., & Mukhoiyaroh, M. (2022). Penerapan Teori Pemrosesan Informasi Robert M. Gagne pada Pembelajaran Pendidikan Agama Islam di SDI Al-Mubarak Surabaya. *Edudeena: Journal of Islamic Religious Education*, 6(2), 144-157