



## Strategies for Developing Numeracy Literacy in Junior High Schools in Indonesia: a Literature Review

Nia Muniasari<sup>1</sup>, Delia Elvaryssa Lovelly<sup>2</sup>, Aan Anisah<sup>3\*</sup>, Nasir Asman<sup>4</sup>

Fakultas Pendidikan dan Sains, Universitas Swadaya Gunung Jati

Email: [niamuniasarii@gmail.com](mailto:niamuniasarii@gmail.com)<sup>1</sup>, [deliaelvaryssa@gmail.com](mailto:deliaelvaryssa@gmail.com)<sup>2</sup>, [aananisah.ugj@gmail.com](mailto:aananisah.ugj@gmail.com)<sup>3\*</sup>,  
[nasirasman85@gmail.com](mailto:nasirasman85@gmail.com)<sup>4</sup>

\*Corresponding author: [aananisah.ugj@gmail.com](mailto:aananisah.ugj@gmail.com)

**Abstract:** The ability in literacy and numeracy is crucial for students at the Junior High School (SMP) level. Teachers and parents play vital roles in developing the literacy and numeracy skills of students. Understanding students' reading and mathematical interests is also important for enhancing their literacy and numeracy abilities. The following study is conducted to analyze strategies for developing numeracy literacy among Junior High School students to enhance their skills. This study is referred to as a literature review. Methods for gathering information include reading, writing, tracking, and analyzing research data objectively, systematically, analytically, and critically related to literacy and numeracy development strategies. The aim of this review is to provide important details from several previous studies to assist researchers in obtaining comprehensive sources. These findings are expected to provide a proper understanding to learners regarding strategies for developing numeracy literacy to improve learners' literacy and numeracy skills.

**Keyword:** Development strategies; Literacy; Numeracy; Junior High Schools

### INTRODUCTION

Literacy is the ability to read and write. The development of literacy is crucial to be considered because literacy is an initial skill that everyone must possess in order to thrive in the future (Fitriani & Aziz., 2019). Ginting (2020) Literacy is an individual's ability to utilize skills and potentials in managing and understanding information while engaging in activities such as reading, writing, arithmetic, and problem-solving in everyday life. In this digital age, it serves as one of the defining characteristics of this century..

Numeracy literacy plays a key role in equipping individuals with the skills necessary for literacy (N, 2015), Literacy encompasses the ability to read, write, and comprehend texts, while numeracy involves the ability to use numbers and apply mathematical concepts in everyday life. Strong skills in literacy and numeracy open opportunities and support children in building successful futures. Numeracy literacy goes beyond arithmetic skills; it includes understanding numerical concepts, data interpretation abilities, and mathematical skills necessary for making informed decisions. Without a strong foundation in literacy and numeracy, students may struggle to understand lessons, express themselves, and keep up with developments in the modern world. The consequences of advancements in information and communication technology are inevitable characteristics of the 21st century. In fact, the rapid technological advancements in education can serve as teaching tools used by teachers during the teaching and learning process. Although numeracy literacy has broad implications, in-depth

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\* Aan Anisah, [aananisah.ugj@gmail.com](mailto:aananisah.ugj@gmail.com)

research on the factors influencing its development and effective strategies for enhancing it remains an urgent need.

The School Literacy Movement has shown progress, evident through several programs created through collaboration with external organizations. However, this is still insufficient to make students interested in reading and to encourage them to read. This is evident from the outcomes of competitions that are abandoned, such as reading corners established after competitions and literacy cabins that are only visited if specified by a particular teacher. Through the implementation of these programs, the School Literacy Movement hopes that students will achieve results that produce works (Gerakan et al., 2023). The implementation of literacy is crucial for enhancing students' reading, writing, and arithmetic skills, and for preparing them to advance to the next levels of schooling. However, this implementation requires the support of all stakeholders and must be integrated into a comprehensive school curriculum (Jusmirad et al., 2023).

Students' literacy skills in arithmetic reflect the learning process in schools. When implemented, teachers must be able to teach mathematical concepts to students with a comprehensive literacy culture (Sari & Aini, 2022). The development of students' reading and arithmetic skills is an important indicator to assess a country's progress. Therefore, to improve the quality of education, efforts should be made to enhance students' reading and arithmetic abilities at all levels (Herawati, 2022). Students who receive literacy and arithmetic training experience significant improvement in their skills (Lumbantobing, 2022).

The Kampus Mengajar program serves as a learning space and platform for students to develop. This program provides an opportunity for students to learn outside the campus environment for one semester, allowing them to practice complex problem-solving skills. In this program, students act as teachers, collaborating on innovations to develop teaching strategies and models in targeted educational units. The Kampus Mengajar program not only involves students as teaching partners but also empowers them as agents of change in the education sector, particularly in literacy and numeracy.

Campus activities aim to provide students with experiences related to the learning process in schools. This initiative is a response to the challenges faced by the education sector. Students participate in assisting schools in maintaining learning services and adapting the success of learning services at various levels, especially at the primary and secondary levels. (Jannah & Sulianti, 2021)

This journal aims to investigate strategies for developing numeracy literacy among junior high school students and to design innovative approaches to enhance numeracy literacy in various contexts. Strengthening literacy and numeracy is a crucial effort to improve human

resources in the digital and disruptive era. Indonesia lags far behind other countries in terms of capacity. The government and relevant stakeholders must play a role in strengthening literacy, numeracy, and technology among learners and educators in Indonesia. One of the activities is to integrate literacy, numeracy, and technology activities into learning both at school and at home. (D et al., 2022)

## **LITERATURE REVIEW**

According to Alberto, literacy is the ability to read and write, enhance knowledge and skills, think critically in problem-solving, and communicate effectively, which can develop potential and contribute to societal life (Rizqiyah & Arsanti, 2022). Numeracy is the ability to apply numerical concepts and functional skills in everyday life (Nurhayati et al., 2022). Supporting factors for numeracy literacy are found in school facilities that are sufficiently adequate for students to learn (Aurora Nur Haliza et al., 2022). Supporting indicators of numeracy literacy include several elements such as basic mathematical understanding, ability to solve numerical problems, interpreting data in the form of graphs or tables, and the ability to apply mathematical concepts in everyday situations. This includes the ability to measure, calculate, and count in various contexts (Ate & Lede, 2022).

## **RESEARCH METHODOLOGY**

This research involves a series of activities related to gathering information from various library sources, reading, note-taking, and managing study data in an objective, systematic, analytical, and critical manner, focusing on Strategies for Developing Numeracy Literacy in Junior High Schools in Indonesia. The research preparation method with this literature review is similar to other studies, but the data sources used are articles related to the variables in this study. This literature review study conducts thorough and in-depth analysis to obtain objective results on how strategies for developing numeracy literacy in junior high schools in Indonesia.

The information gathered in this study is collected indirectly by researchers through the use of data sources such as books, journals, and articles listed on Google Scholar, SINTA, and GARUDA. These sources are selected based on their relevance to the School Literacy Movement (GLS), intended to enhance the literacy culture of elementary school students. The data analysis method used in the study is content analysis. This stage begins with examining the most relevant research findings, then evaluating the suitability and relevance of the data. Next, the researcher examines the research years in reverse, using journals or articles published

within a minimum of 5 years ago and a maximum of 10-15 years ago. Then, the reviewer writes down the elements considered beneficial and relevant to the topic under study.

## **FINDINGS AND DISCUSSION**

Collaborative strategies for improving literacy and numeracy involve various parties, including students, teachers, schools, principals, and parents. To achieve learning freedom, the government implements important programs such as the School Literacy Movement, literacy team training, minimum assessment, community practitioner mobilization, third-party involvement, and school-based program implementation involving students directly in reading, writing, and arithmetic skills (Widiyasari & Eminita, 2023). Parents assist their children with reading and arithmetic skills at home (Segers et al., 2014)

Artini & Wijaya (2020) argue that literacy development strategies in the classroom using playful methods, storytelling methods, reading corners, text displays on classroom walls, and related usage are effective. Strategies outside the classroom include utilizing local libraries, using traditional games, and collaborating with parents. Wahyuni & Darsinah (2023) argue that students must also be able to create a comfortable and friendly learning atmosphere between teachers and students. The goal is for students to understand the material to the fullest. A comfortable and friendly atmosphere can be created in simple ways such as games and rewards. By doing so, students can easily achieve learning targets.

Napfiah et al., (2023) suggest using information technology and learning resources to develop and improve students' literacy and numeracy, such as using YouTube and learning resources. Ati & Widiyanto (2020) aim to increase reading and writing interest among junior high school students through activities related to reading and writing skills, with the school constantly sharing information related to reading and writing skills, introducing the importance of increasing interest, and organizing competitions as a platform for active student participation.

(Faridah et al., 2022) suggest that the Project-Based Learning (PjBL) model is effectively used for arithmetic and literacy skills. To improve students' literacy and numeracy skills, programs such as morning literacy, extra lessons, reading corners, and library revitalization programs are effective (Ifrida et al., 2023). Increasing students' interest in reading is achieved by providing more diverse reading and writing skills, understanding the importance of reading, and helping students make direct observations (Aziz et al., 2023).

Tutoring programs can improve students' skills in primary and secondary schools, as evidenced by students' abilities in literacy numeracy questions (Makay et al., 2023). Effective programs to improve reading and arithmetic skills include additional learning, reading corners,

and library revitalization programs and the existence of school magazine walls (Ifrida et al., 2023). Fostering reading interest, during the habituation phase, involves reading for 15 minutes before starting class, creating reading corners, and creating a text-rich environment. In the development phase, mandatory library visits, developing reading for 15 minutes before learning, conducting wall sheets, and other literacy development activities are held. A learning phase where reading is done at the beginning, middle, or end of the lesson, using different methods and tools, and taught at specific times in the library (Aziz et al., 2023)

The School Literacy Movement has not been systematically implemented; efforts made by schools to support the literacy movement include offering a variety of reading materials, creating 15 minutes of reading before starting lessons, and creating a computer laboratory. Although challenges are encountered in implementing the School Literacy Movement, the implementation of the program requires support from school components such as supervisors, principals, and school committees (Rahmatullah et al., 2021). The School Literacy Movement is carried out by providing a social affective environment and creating a comfortable and supportive physical environment for literacy (Agustina & Moh Zayyad, 2023). Writing, library visit competitions, literacy parties, reading rooms, reading in the library, and literacy corners can develop students' literacy skills (Retnasari et al., 2022).

The implementation of literacy programs to develop literacy in junior high schools can be done by integrating digital literacy programs into the curriculum, using various digital platforms such as e-library (edoo), podcasts, bookstagram, dapodik information systems, e-newspapers, and various learning environments like Google Classroom, WhatsApp Groups, Zoom, and Google Meet (Durratunnisa & Nur, 2020).

Group learning using good learning environments and methods makes learning very effective, so the development of literacy and numeracy in groups of students who are not yet fluent in reading and arithmetic will become smoother due to frequent discussions with their groupmates (Shabrina, 2022). Literacy development strategies in the classroom using playful methods, storytelling methods, reading corners, text displays on classroom walls, and bookbinding are effective (Wahyuni & Darsinah, 2023)

The process of literacy development involves planning the development of literacy culture, which is carried out through the formulation of objectives, program formulation, strategy formulation, and management, facilities, and infrastructure. Implementation to develop literacy consists of habituation, development, and teaching processes. Estimates are made as weekly, monthly, and annual calculations (Saadati & Sadli, 2019). By maintaining

library facilities, students can enhance their reading activities in the library in a fun and comfortable way and develop students' literacy skills (Afghani et al., 2022)

Literacy and numeracy are foundational skills in solving life problems, serving as the basis for further education, aimed at equipping children with good communication and social skills towards their surroundings. Literacy and numeracy are crucial early childhood skills that should be fostered early on to cultivate a love for reading and make it an enjoyable habit.

The development of literacy in primary schools in Indonesia is an important topic that requires special attention. This research indicates that the development of students' arithmetic skills is influenced by several factors such as teaching quality, support from specific institutions, and the continuity of mathematics education in schools.

To achieve higher goals, it is hoped that the development of numeracy literacy in Indonesian secondary schools will be deepened and integrated into other curricula. Additionally, cooperation between the government, school administrators, teachers, and other stakeholders must be enhanced to create a learning environment that supports students' arithmetic and reading abilities.

## **CONCLUSION AND RECOMMENDATIONS**

The development of literacy in primary schools in Indonesia is an important topic that requires special attention. This research indicates that the development of students' arithmetic skills is influenced by several factors such as teaching quality, support from specific institutions, and the continuity of mathematics education in schools. Ways to develop students' literacy and numeracy include integrating digital literacy programs into the curriculum, using various digital platforms such as e-library (edoo), podcasts, bookstagram, dapodik information systems, e-newspapers, and various learning environments like Google Classroom, WhatsApp Groups, Zoom, and Google Meet, library facilities. Students can enhance their reading activities in the library in a fun and comfortable way and develop students' literacy skills, literacy development strategies in the classroom using play methods, storytelling methods, reading corners, displaying texts on classroom walls, and bookbinding. Strategies used outside the classroom include visiting local libraries, using traditional games, and collaborating with parents. To achieve higher goals, it is hoped that the development of literacy and numeracy in Indonesian secondary schools will be deepened and integrated into other curricula. Additionally, cooperation between the government, school administrators, teachers, and other stakeholders must be enhanced to create a learning environment that supports students' arithmetic and reading abilities. By taking these steps, it is hoped that arithmetic skills in

Indonesian secondary schools will be improved, making students more prepared to face the challenges of an increasingly complex world.

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