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Learning Innovations in Improving Reading and Arithmetic Literacy Skills in Elementary School Students

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Abstract
The Minimum Competency Assessment is a government policy designed to address the challenges of the 21st century by measuring two essential competencies, namely reading literacy and numeracy literacy. Reading literacy refers to the ability to understand, interpret, and derive meaning from texts, while numeracy literacy refers to the ability to apply number concepts and arithmetic skills in everyday life. Since these competencies need to be developed from the primary school level, teachers are required to create innovative learning practices. Such innovations may include the use of learning models, media, methods, strategies, approaches, and teaching materials. This article aims to analyze the application of learning innovations in improving elementary school students' reading and numeracy literacy skills, as well as to synthesize previous studies in order to provide a clearer understanding of how these innovations contribute to literacy-oriented learning. The method used in this study is a systematic literature review based on articles from international and national journals. The inclusion criteria focused on studies related to learning innovation, reading literacy, and numeracy literacy. The findings show that learning innovations are generally effective in improving students' reading and numeracy literacy skills. This review contributes to the existing body of knowledge by identifying effective forms of learning innovation and offering a comprehensive overview that can serve as a reference for teachers, researchers, and policymakers in developing more meaningful literacy and numeracy learning in elementary schools.

Keywords: *Learning innovation; reading literacy; numeracy*

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Introduction

Education is a conscious effort undertaken by society through guidance and teaching, both in and out of school, to prepare students for the future. In the 21st century, the skills students must possess are reading and numeracy literacy. There are several important reasons for innovating learning, one of which is to prepare students for the Minimum Competency Assessment (QA) conducted by the government, which measures reading and numeracy literacy (Alviani, 2023).

Reading literacy is the process of interpreting the ideas conveyed by the author, connecting them with prior knowledge, and constructing meaningful understanding from the text (Shufairo et al., 2024). Through reading activities, students develop comprehension skills, expand their vocabulary, strengthen critical thinking, and improve their ability to analyze and relate new information to prior learning. In this way, reading supports students' cognitive development and helps them engage more effectively in various learning activities. Therefore, fostering reading interest from an early age is essential, as it contributes not only to academic achievement but also to the development of lifelong learning habits.

Numeracy literacy skills are essential in all aspects of life, both at home and in the community. Examples of its application in everyday life include shopping, planning vacations,

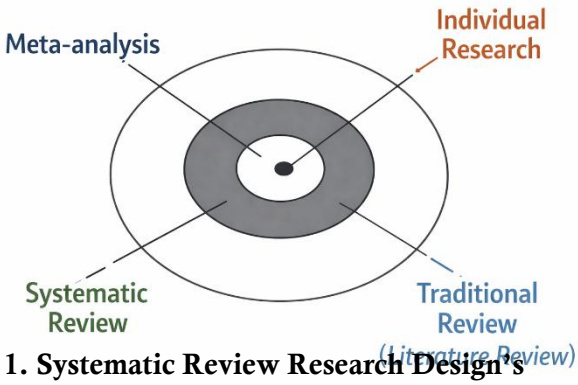
starting a business, and building a house. To make informed decisions and apply them to everyday life, students must understand numeracy. Numeracy is the ability, confidence, and willingness to engage with quantitative or spatial information to make informed decisions in all aspects of daily life (Tanjung et al., 2025). Numeracy can be defined as the ability used in everyday life in applying number concepts and arithmetic operation skills (for example, at home, work, and participation in community life and as a citizen).

As teachers, we must be more creative in increasing students' interest in reading literacy and numeracy literacy both in the school environment and at home. With the innovation provided by teachers, it is hoped that it will be effective in improving learning outcomes in reading literacy and numeracy skills for students. With this innovation, the learning carried out will certainly give a special impression to students and foster student enthusiasm in carrying out ongoing learning.

The types of innovation used in learning vary, from models and media to teaching materials. For example, innovating learning by implementing the SQ3R model with the help of storybooks to improve reading skills (Misnawan, Parmiti, and Renda 2020). The study found a significant influence of the SQ3R learning model assisted by story books on reading skills in grade III students in SDN Gugus V, Kecamatan Sukasada. Dores and Setiawan (2018) innovating learning by implementing fairy tale-based LKS teaching materials to improve the mathematical literacy skills of 4th grade students. Research shows an increase in the average test results of 8.48 from before. Dalam penelitian Pramujiono, Saputra, dan Rachmadtullah (2020) innovate learning using a multiliteracy learning model assisted by big books to improve reading literacy skills. The study successfully improved reading literacy skills, as evidenced by the average score of the experimental class of 63.39 and the average score of the control class of 39.71. Based on these things, this article aims to analyze the application of learning innovations in improving reading literacy and numeracy skills for elementary school students.

Research Method

The method used is a systematic review by analyzing research manuscripts obtained from Google Scholar, Eric and Garuda Ristekdikti indexed nationally and internationally in the last ten years which aims to answer research questions by summarizing research results. The steps in the systematic review are as follows: Formulating research questions, conducting literature searches, selecting articles, conducting analysis, interpreting and compiling a final report. The criteria for articles used in this study are related to learning innovation, reading literacy skills, and numeracy literacy skills.



Pic 1. Systematic Review Research Design's

Result and Discussion

The research results included in the literature review were obtained from national journals related to learning innovations to improve reading and numeracy literacy. The types of journal articles analyzed were classroom action research, research and development (R&D), and quantitative research.

Reading Literacy

Reading literacy skills play a crucial role in students' lives, both at school and in the community. Developing reading literacy skills can broaden students' horizons. Reading literacy provides the foundation for facing the 21st century (Krisdianti et al., 2025). In the study, various effective ways to develop literacy and numeracy skills in the school environment, such as project-based approaches and educational games, supportive classroom and school environments, targeted teaching strategies, interactive and participatory learning programs, SSI-based Student Worksheets (LKPD), Mobile Mathematics Pathways that combine technology with the PBL model, the AKSI application (Indonesian Student Skills Application), storytelling programs, reading, writing and arithmetic lessons, and the use of learning media.

In research (Andika & Vanadya, 2025) showed that the implementation of the Discovery Learning model at MIN 1 Belitung Timur significantly improved students' reading literacy skills. Students' literacy test scores increased from 65 in the pre-cycle to 80 in the second cycle, with the percentage of students achieving the Minimum Competency (KKM) increasing from 40% to 85%. Furthermore, students' motivation and active participation in the learning process also increased, as reflected in their increased involvement in class discussions and reading activities. This model has proven effective in creating an interactive learning environment and supporting students' literacy development.

In research (Khairunnisa, 2024) the results of the study showed that the implementation of this model can significantly improve students' reading skills. In the first cycle, the average score of students' reading ability was 59.03, while in the second cycle it increased to 81.74. In addition, students' active participation also increased, from 63.7% in the first cycle to 85.5% in the second cycle. Students became more active and motivated in the learning process through discussions and interactions using folktales as reading materials. The Cooperative Script method has been proven effective in encouraging students to speak, listen, and summarize information, which improves their understanding of the text and overall reading literacy skills.

In research (Asih et al., 2024) showed that the implementation of the SQ3R (Survey, Question, Read, Recite, Review) method was effective in improving the reading literacy skills of elementary school students. By using this method, students became more actively involved in the reading process through structured stages, which helped them to better understand the text and connect it with existing knowledge. The results of the study showed a significant increase in students' reading comprehension, with average scores increasing and most students successfully achieving the Minimum Completion Criteria (KKM) after the implementation of the SQ3R method. This approach not only improved students' reading comprehension but also stimulated their critical and evaluative thinking skills, which are very important for further in-depth text analysis. The implementation of this method successfully encouraged students to think more actively and be involved in the learning process, which contributed to improving their learning outcomes.

The next learning innovation is carried out in research Harni (2020) applied the jigsaw model to improve reading skills. The study found that the results of the first cycle were still suboptimal, but in the second cycle, the children's reading skills increased by nearly 100%.

Nshimbi, Serpell, dan Westerholm (2020) in his research, he used a phone-based medium, Graphogame, a literacy game created for elementary school students in Africa. Using the game, students became literate. Before being given the graphogame, students completed a pretest to determine their literacy skills before being given the graphogame. The results of the graphogame implementation showed an increase in students' literacy skills, with posttest results that were higher than the pretest results given previously. Thus, Graphogames have a positive impact on elementary school students' reading literacy skills in Africa.

It was concluded that various recent studies have shown various innovations in improving students' reading literacy skills in elementary schools. Research by Krisdianti et al. (2025) highlighted the importance of reading literacy skills in equipping students to face the 21st century, with a project-based approach, educational games, and the use of interactive learning media that have proven effective. Andika & Vanadya (2025) found that the implementation of the Discovery Learning model at MIN 1 East Belitung significantly increased students' reading literacy scores, from 65 in the pre-cycle to 80 in the second cycle. Khairunnisa (2024) showed that the Cooperative Script model using folklore also improved students' reading skills, with an average score increasing from 59.03 to 81.74. Asih et al. (2024) added that the SQ3R (Survey, Question, Read, Recite, Review) method was effective in improving reading comprehension, with significant improvements in student test results. Research by Harni (2020) using the Jigsaw model also showed significant improvements in students' reading skills in the second cycle. Finally, Nshimbi, Serpell, and Westerholm (2020) found that the use of graphogame, a phone-based literacy game, successfully improved students' literacy skills in Africa, with posttest scores higher than pretest scores. All of these innovations demonstrate that engaging and structured approaches can significantly improve students' reading literacy skills.

Numeracy Literacy

Students' numeracy literacy is the ability to formulate, apply, and interpret mathematics in various contexts, including its application in everyday life. Therefore, numeracy literacy skills must be trained from an early age. As teachers, we must be creative enough to innovate and create enjoyable learning experiences. In research (Suhardiyani et al., 2026) the innovation of fairy tale-based worksheets (LKS) has proven effective in improving elementary school students' numeracy skills. The use of worksheets adapted to the context of students' daily lives makes the material more relevant and engaging for them. Fairy tale-based worksheets not only serve as a learning medium but also encourage students to develop mathematical communication skills, mathematical reasoning, mathematical connections, and mathematical representation. With a story approach that is close to their experiences, students are more easily engaged in learning activities and can improve their understanding of numeracy concepts, which leads to improved numeracy skills overall.

In addition to using student worksheets (LKS), numeracy skills can be improved through media-assisted learning models. Digital Math Learning media has been proven valid, practical, and effective (Mayadesti et al., 2025). This media provides an engaging and adaptive learning environment that can enhance students' understanding of mathematical concepts. It integrates interactive features such as videos, e-books, quizzes, and games, making it suitable for improving numeracy literacy in elementary schools. This research suggests that this type of media can be an innovative solution for improving mathematics education, aligning with the goals of Indonesia's independent curriculum.

The results of the tangram media research showed that the average posttest score of the experimental group was 80.4 (good category), while the control group only achieved 56 (moderate category), with a significance value of the independent sample t-test of 0.000 <0.05,

which indicates a significant difference between the two groups. This finding proves that the use of tangram media is effective in improving students' mathematical problem-solving abilities, because this media allows students to be more active in learning and understanding geometric concepts concretely, improving students' logical, spatial, and creativity thinking skills (Karista et al., 2025).

Implementing a realistic mathematics approach in learning is also an innovation in improving numeracy skills. Research using a realistic mathematics approach has a positive impact on students' numeracy skills. In the pre-cycle, students' classical mastery only reached 38.09%, but after implementing this approach in cycle I, the mastery increased to 66.67%, and in cycle II, it reached 85.71%. This significant increase indicates that a realistic mathematics approach can help students better understand mathematics material contextually and increase their engagement in learning. This research suggests that educators use a realistic mathematics approach that is tailored to student characteristics and the learning materials provided (Hasanah & Rondli, 2024). Research using a different approach showed a significant increase in students' numeracy skills in the experimental class, with a normalized gain of 0.26 and an effect size of 0.5, which is considered a moderate effect. The average posttest score for students' numeracy skills in the experimental class increased by 10.3% compared to the control class that only used the inquiry model, which only showed an increase of 0.3%. These findings indicate that the differentiation approach in the inquiry model is effective in improving students' numeracy skills, as it accommodates various student learning styles and makes learning more contextual and meaningful, especially in complex physics materials such as Newton's Laws (Liliawati et al., 2022).

The next research is the development of student worksheets (LKS). This research developed a mathematics student worksheet (LKS) based on numeracy literacy with an Islamic nuance on statistics material for fifth-grade elementary school students. This study used a research and development (R&D) method with the ADDIE model consisting of five stages: analysis, design, development, implementation, and evaluation. The research subjects consisted of 62 students from three schools in three different provinces. The results showed that the developed LKS was very feasible in terms of material and language and was practical in its use. This LKS aims to improve students' numeracy skills by providing numeracy-based questions that are relevant to students' daily lives and present an Islamic context. The trial results showed that this LKS was effective in improving students' numeracy literacy skills, with evaluations showing significant improvements in student learning outcomes. This study also suggests that this numeracy-based LKS can be implemented in other schools to improve numeracy skills in Indonesia (Lessy et al., 2023).

The next innovation was carried out by implementing the RME model. The study aimed to improve the numeracy literacy of elementary school students using the Realistic Mathematics Education (RME) method. This study was conducted at SD Al-Ittihadiyah and MI Nurhidayah, involving fourth and fifth grade students. Through the application of the RME method, which focuses on mathematics learning that is relevant to students' daily lives, it is hoped that students can develop their numeracy skills actively and creatively. The results of the study showed that the RME method can improve students' numeracy skills, improve their enthusiasm for learning, and help students solve problems more easily. This program also encourages students to think critically and creatively, increases their interactions with classmates, and provides them with opportunities to develop their talents both inside and outside the classroom. With the RME

method, learning becomes more enjoyable and effective, which contributes to improved learning outcomes and mastery of mathematics material (Barus et al., 2023).

It was concluded that recent studies have shown various innovations in improving elementary school students' numeracy literacy skills. Innovations such as the use of fairy tale-based worksheets (Suhardiyani et al., 2026) have proven effective because they present mathematical material that is relevant to students' daily lives, thereby improving students' mathematical communication and problem-solving skills. Furthermore, Digital Math Learning media (Mayadesti et al., 2025) that integrates videos, quizzes, and games has been shown to improve students' understanding of mathematical concepts in an adaptive and engaging manner. The use of tangram media (Karista et al., 2025) also showed a significant increase in students' mathematical problem-solving abilities, with posttest results for the experimental group being higher than those for the control group. A realistic mathematics approach (Hasanah & Rondli, 2024) successfully improved students' understanding of mathematical material contextually, with classical completeness increasing from 38.09% to 85.71%. The development of numeracy literacy-based worksheets (Lessy et al., 2023) with an Islamic nuance was also effective in improving students' numeracy skills and supporting contextual and meaningful learning. Finally, the implementation of the RME method (Barus et al., 2023) at SD AL-ITTIHADIYAH and MI NURHIDAYAH successfully encouraged students to think critically and creatively, and improved their numeracy skills in a fun and effective way.

Conclusion

This systematic literature review shows that learning innovation plays an important role in improving elementary school students' reading literacy and numeracy literacy. Innovations implemented through teaching materials, learning media, learning models, strategies, and approaches make learning more meaningful, engaging, and effective. These findings confirm that teachers have a central role in selecting and applying innovations that are aligned with students' characteristics and learning objectives. Therefore, strengthening teachers' capacity through professional development and institutional support is essential. At the policy level, schools and education stakeholders need to create conditions that encourage innovation-oriented and literacy-focused learning practices. In this way, learning innovation can contribute not only to better learning outcomes, but also to the development of essential competencies needed in the 21st century.

References

Alviani, F. N. (2023). Asesmen Kompetensi Minimum (AKM) Berbasis Literasi Numerasi pada Pembelajaran MI/SD. *Maliki Interdisciplinary Journal (MIJ)*, *1*(5), 581–586.

Andika, V., & Vanadya, V. (2025). Penerapan Model Pembelajaran Discovery Learning dalam Meningkatkan Kemampuan Literasi Membaca Siswa MIN 1 Belitung Timur. *Global Research and Innovation Edutech Journal (GREAT)*, *01*(01), 290–299.

Asih, S. A., Ikhwanudin, A., Utami, R. D., & Febriyanto, B. (2024). Penerapan Metode SQ3R sebagai Solusi dalam Keterampilan Membaca Pemahaman pada Anak Usia Sekolah Dasar. *Qalam: Jurnal Ilmu Kependidikan*, *13*(2), 40–46.

Barus, L. W., Iksan, R., Dewi, S. E., & Mujib, A. (2023). Meningkatkan Literasi Numerasi Siswa Sekolah Dasar Dengan Metode RME. *Elementar: Jurnal Pendidikan Dasar*, *3*(1), 29–35.

Dores, O. J., & Setiawan, B. (2018). Pengembangan LKS Berbasis Dongeng untuk Meningkatkan Literasi Matematis Siswa Sekolah Dasar Se-Kota Sintang. *Jpmi*, *400*(September), 62–65.

Harni, H. (2020). Meningkatkan Kemampuan Membaca Melalui Penerapan Pembelajaran Kooperatif Model Jigsaw Pada Siswa Kelas Iv Sdn 2 Uebone. *Jurnal Paedagogy*, *7*(2), 108–114. https://doi.org/10.33394/jp.v7i2.2503

Hasanah, U., & Rondli, W. S. (2024). Penerapan Pendekatan Matematika Realistik untuk Meningkatkan Kemampuan Numerasi dalam Kurikulum Merdeka. *Iluminasi: Journal of Research in Education*, *2*(1), 81–92.

Karista, R., Nopiyanti, T. D., & Ayurachmawati, P. (2025). Media Tangram sebagai Strategi Inovatif dalam Meningkatkan Kemampuan Pemecahan Masalah Matematis Siswa Sekolah Dasar. *Pendas: Jurnal Ilmiah Pendidikan Dasar*, *10*(02), 371–381.

Khairunnisa, A. D. (2024). Optimalisasi Kemampuan Membaca Intensif Siswa SD dengan Pendekatan Cooperative Script. *TEACHING : Jurnal Inovasi Keguruan Dan Ilmu Pendidikan*, *4*(3), 229–236.

Krisdianti, N., Hani, D., Raya, F., & Sukaisih, R. (2025). Developing Students ' Literacy and Numeracy Skills in the School Environment. *PPSDP International Journal of Education*, *4*(1), 36–51.

Lessy, D., Nukuhaly, N. A., & Rumasoreng, M. I. (2023). Pengembangan Lembar Kerja Siswa (LKS) Matematika Berbasis Literasi Numerasi. *AKSIOMA: Jurnal Program Studi Pendidikan Matematika*, *12*(1), 814–824. https://doi.org/https://doi.org/10.24127/ajpm.v12i1.6449

Liliawati, W., Setiawan, A., Rahmah, S., & Dalila, A. A. (2022). Pendekatan Pembelajaran Diferensiasi dalam Model Inkuiri terhadap Kemampuan Numerasi Siswa. *Jurnal Ilmiah Pendidikan Dan Pembelajaran*, *6*(2), 393–401. https://doi.org/https://doi.org/10.23887/jipp.v6i2.50838

Mayadesti, P., Hendrizal, & Yeliza, M. (2025). Interactive Digital Math Media for Enhancing Elementary Students' Learning Outcomes. *Jurnal Cakrawal Pendas*, *11*(4), 949–963. https://doi.org/http://dx.doi.org/10.31949/jcp.vl Ii4.15701

Misnawan, I. W., Parmiti, D. P., & Renda, N. T. (2020). Model Pembelajaran SQ3R Berbantuan Meningkatkan Keterampilan Membaca Siswa Buku Cerita. *Jurnal Ilmiah Pendidikan Profesi Guru*, *3*(2), 282–291. https://doi.org/http://dx.doi.org/10.23887/jippg.v3i2

Nshimbi, J. C., Serpell, R., & Westerholm, J. (2020). Using a phone-based learning tool as an instructional resource for initial literacy learning in rural African families. *South African Journal of Childhood Education*, *10*(1), 1–9. https://doi.org/10.4102/sajce.v10i1.620

Pramujiono, A., Saputra, D. S., & Rachmadtullah, R. (2020). Model Pembelajaran Multiliterasi Berbantuan Media Big Book Terhadap Kemampuan Membaca Pemahaman Siswa Di Kelas V Sekolah Dasar. *Jurnal Pendidikan Dasar*, *11*(02), 282–290.

Shufairo, S., Fazza, M., & Attalina, S. N. C. (2024). Implementasi Model Pembelajaran PjBL untuk Meningkatkan Kemampuan Literasi Membaca Siswa pada Mata Pelajaran Bahasa Indonesia Kelas 3 MI I'Anatush Shibyan. *Pediaqu : Jurnal Pendidikan Sosial Dan Humanior*, *3*(3), 1926–1937.

Suhardiyani, K., Subanti, S., & Usodo, B. (2026). Literature Review On The Development Of Student Worksheet Based On Mikir Strategies To Improve Numeracy Abilities. *Sosioedukasi Jurnal Ilmiah Ilmu Pendidikan Dan Sosial*, *15*(1), 176–184.

Tanjung, Y. T., Razali, M., Halimah, & Rini. (2025). Pengenalan Literasi Numerasi dalam Pembelajaran Matematika Berbasis Digital di SD IT Daarul Istiqlal. *Altafani : Jurnal Pengabdian Kepada Masyarakat*, *5*(1), 57–66.