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INTEGRATION OF MULTIMODAL LITERACY WITH A DEEP LEARNING APPROACH TOWARDS ELEMENTARY SCHOOL STUDENTS' READING COMPREHENSION: A CASE STUDY

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Abstract
This study aims to analyze the integration of multimodal literacy based on immersive learning in elementary school students' reading comprehension and its relationship to reading comprehension skills. Although multimodal literacy has been widely researched, studies that integrate it with an immersive learning approach in the elementary school context are still limited, particularly in examining students' meaning construction processes at the inferential and reflective levels. This study used a qualitative approach with a case study design conducted at SDN 04 Karangbener with one fourth-grade teacher and 17 fourth-grade students as subjects. Data were collected through observation, semi-structured interviews, and documentation, then analyzed using the Miles and Huberman model through the stages of data reduction, data presentation, and drawing conclusions with a thematic coding process. The results showed that the integration of video as an initial stimulus and digital text as a reinforcement of understanding was able to increase student engagement and facilitate cognitive integration between representations, so that understanding develops from the literal to the inferential and reflective levels as part of the immersive learning process. However, the implementation of learning still faces obstacles such as limited time, digital resources, and differences in student abilities. Theoretically, this research contributes to strengthening the integration of multimodal literacy and deep learning as a pedagogical framework in reading learning, while practically it shows that its effectiveness depends on the readiness of the learning environment and teacher competence.
Keywords: *multimodal literacy; deep learning; reading comprehension*

Abstrak
Penelitian ini bertujuan untuk menganalisis integrasi literasi multimodal berbasis pembelajaran mendalam dalam pembelajaran membaca pemahaman siswa sekolah dasar serta keterkaitannya dengan kemampuan membaca pemahaman. Meskipun literasi multimodal telah banyak diteliti, kajian yang mengintegrasikannya dengan pendekatan pembelajaran mendalam dalam konteks sekolah dasar masih terbatas, khususnya dalam mengkaji proses konstruksi makna siswa pada tingkat inferensial dan reflektif. Penelitian ini menggunakan pendekatan kualitatif dengan desain studi kasus yang dilaksanakan di SDN 04 Karangbener dengan subjek 1 guru kelas IV dan 17 siswa kelas IV. Data dikumpulkan melalui observasi, wawancara semi-terstruktur, dan dokumentasi, kemudian dianalisis menggunakan model Miles dan Huberman melalui tahapan reduksi data, penyajian data, dan penarikan kesimpulan dengan proses pengkodean tematik. Hasil penelitian menunjukkan bahwa integrasi video sebagai stimulus awal dan teks digital sebagai penguatan pemahaman mampu menumbuhkan keterlibatan siswa serta memfasilitasi integrasi kognitif antar representasi, sehingga pemahaman berkembang dari tingkat literal ke inferensial dan reflektif sebagai bagian dari proses pembelajaran mendalam. Namun, implementasi pembelajaran masih menghadapi kendala berupa keterbatasan waktu, sarana digital, dan perbedaan kemampuan siswa. Secara teoretis, penelitian ini berkontribusi dalam memperkuat integrasi literasi multimodal dan pembelajaran mendalam sebagai kerangka pedagogis dalam pembelajaran membaca, sedangkan secara praktis menunjukkan bahwa efektivitasnya bergantung pada kesiapan lingkungan belajar dan kompetensi guru.
Kata Kunci: *literasi multimodal; pembelajaran mendalam; membaca pemahaman*

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Introduction

Reading ability is an important language skill in the educational process because it plays a role in helping students obtain and understand information (Rahmawati et al., 2023). Reading goes beyond recognizing written symbols, as it involves an active cognitive process in which readers construct meaning, interpret information, and engage with the text (Muliawanti et al., 2022; Sarika, 2021). Through reading activities, students not only obtain information, but also develop thinking skills and broaden their horizons (Widianti et al., 2025). In general, reading consists of several types, including reading comprehension, which has an important role because it requires students' ability to interpret the contents of the text, draw conclusions, and connect it with previous knowledge (Riyadi et al., 2019). As it develops, literacy is no longer understood as the ability to read and write mechanically, but also includes the ability to understand and reflect on information in various life contexts (Pramudyo, 2023).

The development of information technology has expanded literacy practices to various media such as images, sound and video (Putrayasa et al., 2024). This gives birth to multimodal literacy which emphasizes the integration of linguistic, visual, and contextual elements in constructing meaning (Cheng et al., 2025; Rahardi, 2022). This concept is in line with the multimodal theory by Kress & Van Leeuwen (2020) which emphasizes that meaning in learning emerges through the interaction of multiple modes, including visual, auditory, and contextual elements, rather than relying solely on written text. To optimize multimodal literacy, a learning approach is needed that encourages meaningful understanding, one of which is in deep learning in a pedagogical context based on constructivism and supported by *Cognitive Theory of Multimedia Learning* dari (Mayer, 2021).

Previous research by D. Purnama & Febriyanto (2024) and Nurmahanani (2023) This finding is supported by international studies showing that multimodal literacy helps students construct meaning in reading comprehension through the integration of various representations (Carcamo & Carmona, 2025; Insani et al., 2024; Trigo Ibáñez et al., 2024). However, these studies have focused on the use of multimodal media as learning aids and have not yet examined the integration of multimodality with deep learning approaches. Consequently, understanding of how students construct meaning inferentially and reflectively in learning contexts remains limited. Furthermore, the integration of multimodal literacy with deep learning approaches has not been widely explored, particularly in the context of elementary schools in Indonesia, leaving a significant gap for further research.

Critically, Previous studies reveal several limitations, particularly in terms of theoretical integration, emphasis on learning outcomes rather than processes, and the limited focus on elementary school contexts in Indonesia. These gaps indicate the need for research that examines not only outcomes but also the process of multimodal integration in learning in greater depth. Therefore, this study offers novelty by integrating multimodal literacy and deep learning as a conceptual framework to analyze students' meaning construction processes in reading comprehension more comprehensively.

Based on this gap, this study aims to analyze how the integration of multimodal literacy and deep learning in elementary school students' reading comprehension learning, as well as how this integration facilitates reading skills at the inferential and reflective levels as part of a deeper meaning construction process.

Research Methods

This research uses a qualitative approach with a case study design to deeply understand the integration of multimodal literacy and immersive learning in elementary school students' reading comprehension. This approach was selected to allow an in-depth exploration of learning processes, interactions, and participants' experiences within their natural classroom setting. (Creswell, 2018).

The research was conducted at SDN 04 Karangbener, Bae District, Kudus Regency from October 28, 2025, to November 28, 2025, in the odd semester of the 2025/2026 academic year. The research subjects included 1 fourth-grade teacher and 17 fourth-grade students. The subject selection was done purposively at the class level, namely choosing fourth-grade as the focus of the research because it was relevant to the research objectives related to reading comprehension learning.

Research data was obtained through observation, semi-structured interviews, and documentation. Observations were used to observe the learning process and teacher-student interactions, interviews to explore subjects' experiences and responses, and documentation in the form of learning tools and student work results served as supporting data.

The instruments used included observation guidelines for observing learning activities, interview guides to explore the experiences and perspectives of teachers and students, and documentation sheets to collect supporting data such as photos of activities and student learning outcomes. The research procedure was carried out in three stages: planning, implementation, and data analysis.

Data analysis using analysis (Miles et al., 2014) which includes data reduction, data presentation, and drawing conclusions and involves a coding process to identify categories and themes that emerge from the data. Data validity is maintained through triangulation of sources, techniques, member checking, and attention to aspects of credibility, dependability, and confirmability.

Result and Discussion

1. Developing Student Engagement

Based on observations, reading comprehension instruction in fourth-grade students at SDN 04 Karangbener was implemented through an integration of video and digital text. The video about the legend of Lake Toba was used as an initial stimulus to build students' knowledge before reading the text. This stage helped students understand the context of the story, as evidenced by their ability to identify intrinsic elements such as characters, setting, and moral. These results were also supported by (Saputra et al., 2025; Yunus, 2022) which emphasizes that the integration of visual and text media in reading learning contributes to the development of student engagement and understanding, because students gain a more contextual and non-one-way learning experience.

Empirically, students demonstrated active participation in the discussion and were able to respond appropriately to teacher questions. Of the 17 students, 15 were able to answer questions related to the story content after the multimodal stage. This finding strengthens the category of student engagement development. This is supported by teacher interviews, which stated that

"Students are more enthusiastic and don't get bored quickly when using videos"

And the student's statement that

"Videos help me understand the story before reading the text."

The results of this study indicate that the use of multimodal not only fosters participation, but also contributes to students' readiness to understand texts more effectively.

Analytically, visual stimuli function as initial attention-getters that foster students' cognitive readiness to read. This emphasizes that multimodality is not only visually engaging but also facilitates learning engagement. This finding aligns with multimedia learning theory from Mayer (2021) and the concept of multimodality which emphasizes the integration of various modes of representation in constructing meaning (Kress & Van Leeuwen, 2020). And supported by research findings that show that the use of multimodal can foster student engagement and understanding through visual and verbal integration (Carcamo & Carmona, 2025; Daulay & Utami Dewi, 2025; Insani et al., 2024). Thus, student engagement is not only behavioral, but also cognitive through multimodal integration.

2. Cognitive Integration Across Modalities

In addition to engagement, this study found cognitive integration across modes in reading learning. Student worksheet results showed that students were able to answer questions at both the literal and inferential levels, although their reflective abilities varied. This indicates that students are not simply understanding information in isolation but are beginning to connect visual information from the video with written text. Analytically, this process demonstrates the integration of information across representations, strengthening the construction of meaning.

The ongoing learning also demonstrated more complex cognitive engagement. During the discussion, students were able to express opinions, clarify their understanding, and respond to their peers' answers. This demonstrates that learning is not solely focused on literal understanding, but is evolving toward inferential and reflective understanding. However, the uneven level of reflective ability indicates that not all students automatically reach the deep learning stage, necessitating more structured learning strategies to optimally support the meaning-construction process. Thus, multimodal integration encourages high-level cognitive engagement in students' meaning-construction processes. This process reflects the characteristics of deep learning in a pedagogical context, where students not only grasp information superficially but are able to interpret, connect, and reflect on meaning in a more complex manner.

This finding is in line with the theory Mayer (2021) which emphasizes that learning tends to be more effective when students are able to integrate visual and verbal information within a unified process of understanding. In addition, in the perspective Kress & Van Leeuwen (2020), Meaning is constructed through the interaction of various modes of representation. This interpretation suggests that learning is no longer linear (text only), but multimodal, thus enabling deeper understanding than conventional learning. International research by (Kurniasih et al., 2025; Lim et al., 2023; Lopez et al., 2025) also shows that multimodal pedagogy in elementary grades can improve the quality of learning interactions and deepen students' understanding. Thus, the results of this study not only confirm previous findings but also broaden our understanding of multimodal integration in the context of elementary schools in Indonesia.

3. Obstacles to Implementing Multimodal Learning

Despite its positive impact, this study also identified challenges in implementing multimodal learning. Limited learning time meant that not all stages of in-depth learning could be implemented optimally. Furthermore, the limited availability of digital devices and differences in student abilities presented challenges to multimodal integration. This was reinforced by a teacher's statement:

"Some students still need guidance in connecting the video to the text."

Analytically, these constraints indicate that the effectiveness of multimodal learning is determined not only by learning strategies but also by contextual factors such as infrastructure readiness and students' initial abilities. These findings indicate that multimodal literacy is contextual and cannot be implemented uniformly without adequate learning environmental support. This aligns with international research findings that confirm that the success of digital literacy is influenced by technological readiness and user competence (Adien Inayah et al., 2024; Kurniasih et al., 2025; Lim et al., 2023). This shows that the success of multimodal literacy is not universal, but rather depends heavily on the readiness of the learning ecosystem in schools.

Overall, the research results show three main findings: the development of student engagement, the occurrence of cognitive integration across modalities, and the existence of contextual implementation obstacles. These three themes indicate that multimodal literacy can be viewed not merely as a teaching strategy, but as a broader pedagogical approach that connects cognitive, emotional, and contextual aspects of learning in the immersive learning process. These findings confirm that immersive learning-based multimodal literacy integration contributes not only to cognitive reading comprehension but also to student engagement and learning environment readiness. Furthermore, multimodal integration has the potential to be an adaptive learning approach to the demands of 21st-century literacy. However, its implementation requires adequate learning system support, including technological readiness, teacher competency, and student characteristics. Thus, the effectiveness of multimodal learning depends on the integration of learning strategies, student readiness, and learning environment support. These findings also expand the study of multimodal literacy by placing it within the immersive learning framework, thereby providing a theoretical contribution to the development of reading comprehension learning models in elementary schools.

Conclusion

Based on the research results, the integration of multimodal literacy based on immersive learning in reading comprehension learning in grade IV of SDN 04 Karangbener through the use of digital videos and texts was able to increase student engagement and facilitate cognitive integration between representations. This encouraged students' understanding to develop from the literal to the inferential and reflective levels. From a theoretical perspective, these findings reinforce the idea that multimodal literacy and immersive learning can be integrated as a pedagogical framework that supports the construction of meaning more comprehensively. Practically, its success depends on adaptive learning design, facility support, and teacher competence, although still faced with limitations of time, digital tools, and differences in student abilities.

Further research is recommended to develop multimodal learning based on deep learning by utilizing interactive media such as interactive videos, annotative e-books, and digital reading applications that allow students' direct responses to texts, especially to support the development of reading skills at the inferential and reflective levels.

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