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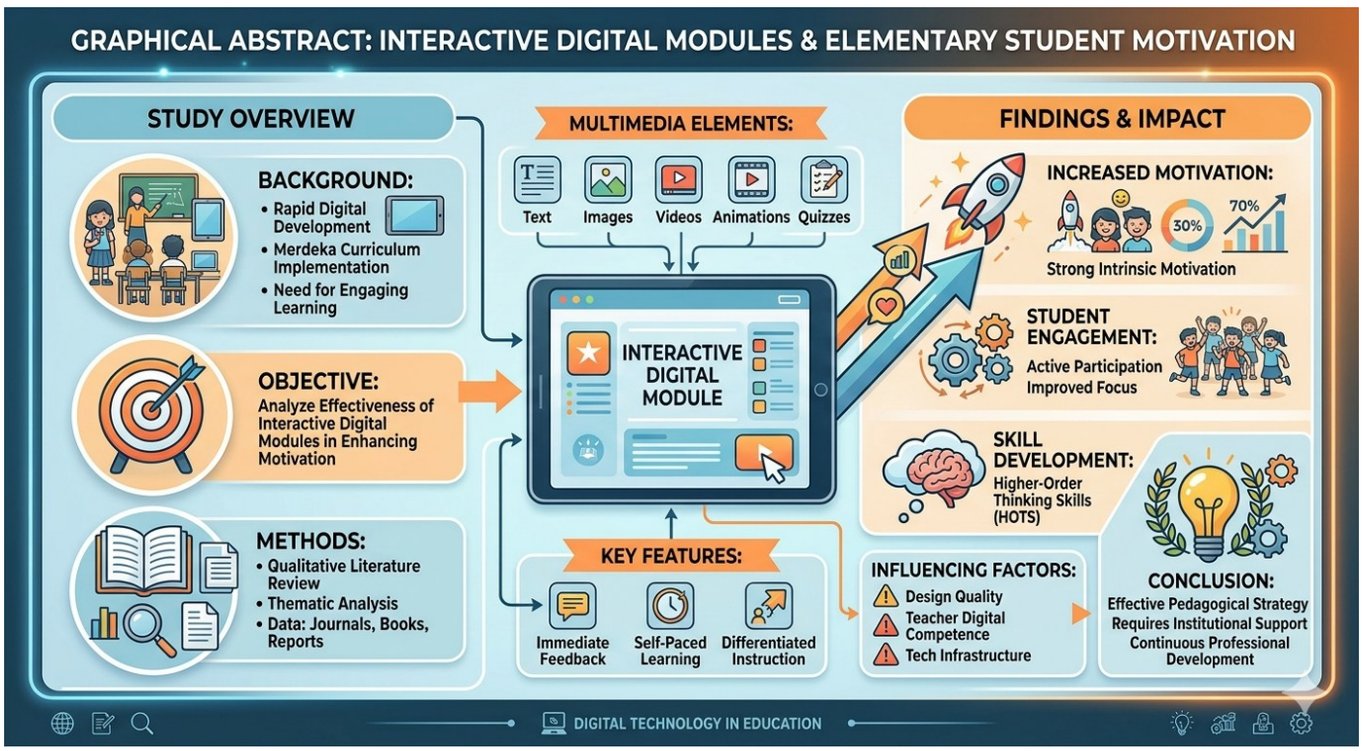

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# The Effectiveness of Interactive Digital Modules in Enhancing Elementary Students' Learning Motivation in the Merdeka Curriculum

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ABSTRACT

**Background:** The rapid development of digital technology in education has encouraged the integration of interactive digital learning media in elementary schools, particularly within the implementation of the Merdeka Curriculum. Interactive digital modules are considered capable of creating more engaging and student-centered learning environments, which may influence students' learning motivation.

**Objective:** This study aims to analyze the effectiveness of interactive digital modules in enhancing elementary students' learning motivation.

Methods: This research employs a qualitative design using a literature review approach. Data were collected from peer-reviewed journals, books, and academic reports related to interactive digital modules, learning motivation, and elementary education. The selected literature was analyzed using thematic analysis to identify key patterns, relationships, and research findings.

**Results:** The findings reveal that interactive digital modules significantly enhance students' learning motivation. The integration of multimedia elements such as text, images, videos, animations, and interactive quizzes creates engaging learning experiences. Features such as immediate feedback and self-paced learning strengthen intrinsic motivation and support differentiated instruction. In addition, interactive modules promote active participation, improve students' focus, and foster higher-order thinking skills (HOTS). However, their effectiveness is influenced by factors such as instructional design quality, teachers' digital competence, and the availability of technological infrastructure.

**Conclusion:** Interactive digital modules function not only as technological tools but also as effective pedagogical strategies to enhance students' motivation and engagement in elementary education. Sustainable implementation requires strong institutional support and continuous professional development for teachers.

IJEA International Journal of Education Alibdhamaal

Keywords
Interactive digital modules, learning motivation, Elementary school, Merdeka Curriculum, Digital learning media

## Introduction

In the 21st century, educational environments have rapidly shifted toward incorporating digital technology to support meaningful and engaging learning experiences for students. Digital learning media, especially interactive digital modules, are believed to strengthen both learning engagement and intrinsic motivation among elementary students. Motivation is a critical determinant of academic success, as students who are motivated tend to participate actively, persist longer in tasks, and demonstrate higher achievement (Ismaniati et al., 2023).

Recent research demonstrates that interactive e-modules developed using systematic models such as ADDIE can significantly enhance student motivation in primary grades. For example, Ismaniati and Iskhamdhanah (2023) found that interactive e-modules increased learning motivation and science literacy among fourth-grade students, with statistical tests confirming effects with significance values < 0.05 (Ismaniati et al., 2023). Similarly, Surbakti & Chantrin, showed that the use of interactive digital media significantly improved motivation compared with conventional classroom methods in a quasi-experimental study with elementary school students (Surbakti & Chantrin, 2025).

The Merdeka Curriculum, implemented in Indonesia, emphasizes student-centered and project-based learning, encouraging active engagement, creativity, and autonomy in learning. In this era, traditional textbooks alone are considered insufficient to meet student needs, and interactive digital modules that integrate meaningful media elements offer potential for deeper engagement and improved motivation (Media & Digital, 2026). Furthermore, research has shown that interactive multimedia, such as digital modules, can create more interesting, relevant, and participatory learning environments, leading to increased student motivation and enthusiasm (Oktaviane et al., 2024).

Despite these advances, there is limited research that specifically investigates the effectiveness of interactive digital modules in enhancing learning motivation within the context of the Merdeka Curriculum. This study aims to fill this gap by analyzing how such modules influence elementary students' motivation to learn, focusing on both quantitative outcomes and qualitative responses.

## METHODOLOGY

This study employs a qualitative research design with a literature review approach as its primary methodology. Qualitative research emphasizes understanding phenomena in context and describing detailed perspectives rather than measuring numerical data. According to Sa'idah (2025), qualitative methods are used to understand human or social phenomena holistically and deeply, particularly when researchers aim to capture rich descriptions and

IJEA International Journal of Education Alibdhamaal

interpretations from existing sources rather than direct numerical measurement (Hasil et al., 2024).

A literature review (also referred to as a systematic or narrative review) is used to gather, analyze, and interpret relevant academic publications related to interactive digital modules, learning motivation, and curriculum implementation in elementary education. A literature review synthesizes findings from previous research to identify patterns, relationships, gaps, and implications in the literature, which informs the current investigation. Taylor and Procter define literature review as the process of reviewing previously published academic work related to the research topic (Hasil et al., 2024).

In conducting this literature review, searches were carried out across multiple academic databases such as Google Scholar, national e-journals, and institutional repositories to collect relevant published articles, books, and reports that discuss interactive digital learning tools and motivation in elementary education. Inclusion criteria focused on studies that (1) investigate digital learning modules or interactive media in education, (2) discuss motivation or engagement as key outcomes, and (3) are relevant to primary or elementary school contexts. Exclusion criteria removed sources that were not peer-reviewed or not directly related to interactive learning media or learning motivation.

Thematic analysis is then used to categorize the data from the collected literature into major themes, such as motivational outcomes, pedagogical implications, and curriculum context (including Merdeka Curriculum). The systematic review aids in understanding how digital

interactive modules influence motivational factors among elementary students and provides a synthesized framework that supports the formulation of research conclusions.

## FINDINGS AND DISCUSSION

### Implementation of Interactive Digital Modules

The implementation of interactive digital modules in learning represents a pedagogical transformation aligned with the demands of the digital era and the policies of the Kurikulum Merdeka. The development of information technology has driven a paradigm shift from teacher-centered to student-centered learning. In this context, interactive digital modules function not merely as supporting media but as strategic instruments to create adaptive, flexible, and competency-oriented learning experiences for students.

According to (Bintang et al, 2024), interactive digital teaching modules are multimedia-based learning materials that integrate text, audio, video, animation, and interactive evaluation features, enabling direct interaction between students and learning content. They emphasize that "interactive digital teaching modules are capable of providing richer and deeper learning experiences compared to conventional teaching methods" (Tegar & Kurnia, 2024). This statement highlights that the implementation of interactive digital modules does not simply replace printed books but transforms the overall learning experience.

In practice, interactive digital modules are designed to support the principle of differentiated learning, which is a hallmark of the Kurikulum Merdeka. Students are given the opportunity to learn at

IJEA International Journal of Education Alibdhamaal

their own pace and according to their individual learning styles (self-paced learning). This allows for personalized learning, where students who need more time can revisit materials without pressure, while those who grasp concepts quickly can move on to the next topic. Such flexibility strengthens the concept of independent learning, which is the foundation of the Kurikulum Merdeka.

Furthermore, the implementation of interactive digital modules is closely related to the development of Higher Order Thinking Skills (HOTS). Modules designed with problem-based approaches, simulations, and reflective quizzes encourage students not only to recall information but also to analyze, evaluate, and create. Features such as virtual simulations and interactive case studies train critical thinking and problem-solving skills. Thus, interactive digital modules contribute to the enhancement of 21st-century skills, including critical thinking, creativity, collaboration, and communication. Research cited in academic journals shows that the use of digital modules based on the Discovery Learning model significantly increases student participation. As many as 92% of respondents expressed their willingness to use interactive digital modules in learning (Tegar & Kurnia, 2024). This finding indicates that the implementation of interactive digital modules is not only academically effective but also enhances students' intrinsic motivation. High learning motivation is a crucial factor in achieving long-term educational success.

From a pedagogical perspective, the implementation of interactive digital modules redefines the role of teachers as facilitators of learning. Teachers no longer serve as the sole source of information

but as guides who direct students in optimally utilizing digital learning resources. (Rahayu et al. 2022) argue that the success of the Kurikulum Merdeka largely depends on teachers' readiness to adapt to innovative teaching practices. Therefore, digital literacy competence among teachers is a key prerequisite for the effective application of interactive digital modules.

Additionally, the quality of interaction in digital learning is a determining factor of effectiveness. Vrasidas and McIsaac (1999) explain that the quality of interaction in online learning is influenced by instructional design, technological support, and active student participation. Interactive digital modules designed with clear navigation structures, user-friendly interfaces, and automated feedback systems enhance the quality of such interactions. This interactivity distinguishes digital modules from conventional learning materials. Nevertheless, the implementation of interactive digital modules also faces challenges. Limitations in technological infrastructure, such as unstable internet access and insufficient device availability, remain major obstacles, particularly in regions with limited digital access. Moreover, teachers' readiness to develop and manage digital modules presents another challenge. A lack of continuous training may hinder the optimal use of technology in learning.

From an educational management perspective, the implementation of interactive digital modules requires policy support and multi-stakeholder collaboration. Governments, schools, and technology providers must work together to provide adequate infrastructure and professional training programs for teachers. Such support is essential to ensure that digital innovation is not temporary

but sustainable and systemic.

Comprehensively, the implementation of interactive digital modules contributes significantly to improving the quality of education. These modules support flexible learning, enhance student motivation and engagement, and foster higher-order thinking skills. With proper design and sufficient resources, interactive digital modules can serve as key instruments in realizing education that is relevant to the digital era and global demands. Thus, the implementation of interactive digital modules should be viewed not merely as a technological innovation but as a pedagogical transformation oriented toward strengthening students' holistic competencies. The integration of technology in learning must be considered a long-term strategy to build an adaptive, inclusive, and globally competitive education system.

**The Impact of Implementing Interactive Teaching Modules on Students' Learning Motivation**

The implementation of interactive teaching modules in learning has a significant influence on increasing students' learning motivation. Interactive modules are designed by integrating various multimedia elements such as text, images, videos, animations, and quiz-based evaluations that allow students to directly interact with the learning material. This interactivity creates a more engaging learning atmosphere compared to conventional one-way teaching methods. Belanisa, (Amir, et al, 2024) state that the use of interactive e-modules can enhance students' learning motivation because the presentation of

material is more appealing and encourages active student involvement in the learning process. Digital modules provide a more meaningful learning experience since students not only read the material but also explore it through interactive features. Based on these findings, it can be understood that learning motivation grows when students feel directly engaged in the learning process. When material is presented in visual and interactive forms, students' curiosity increases, driving them to understand the content more deeply.

Similar findings were presented by (Yulianti et al. 2023), who argue that the use of interactive learning media has a positive impact on the motivation of elementary school students. They explain that interactivity in learning media makes students more interested and less easily bored. This indicates that learning motivation is influenced not only by the content of the material but also by the way it is delivered. Interactive teaching modules designed with attractive layouts and easy navigation systems create enjoyable learning experiences. When the learning atmosphere is enjoyable, students develop stronger internal motivation to participate in lessons.

Furthermore, (Hartati 2022) found in her research that the implementation of interactive e-modules significantly improved students' motivation and learning outcomes in Biology. Hartati explained that interactive modules provide immediate feedback to students through automatic evaluation features. Quick feedback helps students understand their level of comprehension in real time and encourages them to correct mistakes. From this finding, it can be inferred that learning motivation increases when students receive prompt responses to their efforts. The sense of achievement after

completing exercises or quizzes in digital modules becomes a reinforcing factor for students' intrinsic motivation.

More broadly, the impact of implementing interactive teaching modules on learning motivation can be observed in several aspects. First, students' attention and focus during lessons increase, as varied material presentation prevents loss of concentration. Second, active student participation rises because interactive modules demand direct involvement through discussions, simulations, or digital-based tasks. Third, independent learning develops since students can access materials anytime and learn at their own pace. However, the effectiveness of interactive teaching modules in enhancing learning motivation also depends on the quality of module design and the readiness of supporting facilities. Modules that are overly complex or difficult to access may reduce motivation. Therefore, the implementation of interactive teaching modules must be systematically designed and adapted to students' characteristics to maximize their impact on learning motivation.

Based on these findings, it can be concluded that the implementation of interactive teaching modules positively affects students' learning motivation by increasing engagement, providing immediate feedback, and creating a more attractive and enjoyable learning environment. Interactive teaching modules are not merely learning media but also effective strategies for fostering enthusiasm and active student participation in the learning process.

## CONCLUSION

Based on the overall findings of this literature review, it can be concluded that the implementation of interactive digital modules has proven to be effective in enhancing elementary students' learning motivation in the era of the Kurikulum Merdeka, because these modules integrate multimedia elements such as text, images, videos, animations, and interactive evaluations that create a more engaging, student-centered, and meaningful learning environment, which in turn increases students' attention, active participation, and intrinsic motivation, while also supporting differentiated instruction and self-paced learning in accordance with the core principles of the Kurikulum Merdeka that emphasize autonomy, creativity, and competency development, and although the positive impact of interactive digital modules on motivation is strongly influenced by factors such as instructional design quality, teachers' digital literacy, and the availability of adequate technological infrastructure, when these supporting components are properly fulfilled, interactive digital modules function not merely as technological tools but as transformative pedagogical strategies capable of fostering higher-order thinking skills, strengthening students' confidence, and creating sustainable improvements in the quality of elementary education.

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