SMART TVS IN THE STUDY ROOM: A NEW WAY TO BOOST CHILDREN'S MOTIVATION TO LEARN MATH

Nita Andriani[1], Didit Kurniadi[2], Eka Setiahati[3], Jaka Wijaya Kusuma[4]
[1,2,3,4]Universitas Bina Bangsa
Email: jakawijayak@gmail.com

Abstract

This study aims to analyze the role of Smart Tv as a learning medium in enhancing student's motivation in mathematics learning. The article discusses the scope of visual technology integration in mathematics instruction, supporting factors for its effective implementation, and challenges in school settings, The research employed a Systematic Literature Review
Keywords*:* Smart Tv; Learning motivation, Mathematics

INTRODUCTION

Mathematics instruction at various educational levels is still often viewed as a complex and uninteresting subject by some students. This perception leads to low motivation to learn, as evidenced by minimal student participation, a lack of enthusiasm in class, and learning outcomes that fall short of optimal targets. These conditions highlight the need for more creative teaching strategies that are relevant to students' lives and capable of creating an enjoyable learning environment. With the rapid development of digital technology, education has increasingly broader opportunities to utilize technology-based learning media. One device that is beginning to be used in the learning process is the Smart TV, a smart television that can connect to the internet and display various multimedia content. Through the Smart TV, mathematics material can be presented in the form of videos, animations, simulations, and interactive applications, making abstract concepts easier to understand. The use of this medium is believed to enhance students' attention, interest, and engagement in learning.

Previous studies have shown that the use of audiovisual media and digital technology in learning has a positive impact on students' motivation, participation, and understanding. Some studies also report that the use of Smart TVs can create a more active and engaging learning environment. However, these research findings remain scattered across various sources with differing contexts, educational levels, teaching methods, and motivation indicators used, thus failing to provide a comprehensive picture of the effectiveness of Smart TVs in mathematics education.

Based on the above explanation, a systematic review is needed to compile and analyze relevant research findings. Therefore, this study employs the Systematic Literature Review (SLR) method, a planned approach to identify, evaluate, and synthesize relevant research findings. Through this method, it is hoped that a comprehensive understanding of the patterns of Smart TV usage, trends in research findings, and its impact on children's learning motivation can be obtained.

The research questions examined in this study include: 1) how Smart TVs are applied in mathematics learning, 2) how their use affects students' learning motivation, 3) what factors support the successful utilization of Smart TVs in the learning process. The objective of this study is to systematically examine the use of Smart TVs as a mathematics learning medium and its impact on students' learning motivation. Furthermore, this study holds high urgency as it aligns with the demands of learning in the digital era, particularly in improving the quality of mathematics education and fostering students' enthusiasm for learning.

Based on a preliminary review of various previous studies, the hypothesis of this research is that the use of Smart TV as a mathematics learning medium has a positive effect on increasing children's learning motivation. The presentation of visual and interactive material via Smart TV is expected to create a learning experience that is more engaging, meaningful, and easily understood by students.

METHOD

This study employs a qualitative approach using the Systematic Literature Review (SLR) method to systematically identify various studies that examine the use of Smart TVs in mathematics education and their relationship to children's learning motivation. This method was chosen because it provides a comprehensive overview of research developments, patterns of findings, and trends in previous studies through a structured and accountable literature search process (Kitchenham & Charters, 2007; Snyder, 2019).

In this study, the research subjects consist of scientific articles relevant to the research topic. The research population includes all publications examining the utilization of Smart TVs or digital technology-based learning media in mathematics education and learning motivation. The sampling technique used is purposive sampling, which involves the deliberate selection of articles based on pre-determined inclusion and exclusion criteria.

The research was conducted through several stages, namely: 1) formulating the research focus and questions, 2) searching for literature sources in scientific databases, such as Google Scholar, Garuda, DOAJ, and other accredited national journals, using the keywords Smart TV, digital learning media, learning motivation, and mathematics education, 3) conducting an initial screening based on titles and abstracts, 4) selecting articles through a full-text review, 5) performing data extraction, and 6) compiling a synthesis of the research findings.

Data analysis was conducted using content analysis techniques to identify the characteristics, themes, and key findings of each article. The classified data were then analyzed using descriptive-qualitative methods to identify patterns, trends, interrelationships among findings, and the implications of utilizing Smart TV in mathematics learning. This analytical approach draws on Krippendorff (2018) and Miles, Huberman, and Saldana (2014).

The scope of the study is limited to articles published within a specific timeframe and available in open access. Furthermore, this study focuses exclusively on mathematics education and aspects of children's learning motivation; therefore, the research findings may not be generalizable to other subjects. Additional limitations include the possibility that the database used may not have captured all relevant articles, as well as the potential for subjectivity in the data analysis and interpretation process.

RESULT AND DISCUSSION

Based on a synthesis of the various articles analyzed, the use of Smart TVs in mathematics education shows a positive trend in enhancing children's learning motivation. Several studies report that the use of Smart TVs is able to capture students' attention from the start of the lesson, increase interest in the material, and encourage active engagement in the learning process. The use of Smart TVs in mathematics education is generally realized through the presentation of visual and audiovisual content, such as instructional videos, concept animations, interactive simulations, and multimedia-based practice exercises. These media help students understand abstract mathematical concepts in a more concrete and easily understandable way. The visualizations displayed allow students to build conceptual understanding gradually and foster confidence in learning mathematics.

The study findings also indicate that the effectiveness of Smart TV use is influenced by the teaching strategies implemented by teachers. Smart TV that is integrated in a planned manner, aligned with learning objectives, and combined with active learning methods has a

more significant impact on enhancing learning motivation compared to passive use. Furthermore, the synthesis of empirical research findings indicates that the use of Smart TV has a positive effect on enhancing students' motivation and interest in learning across various educational levels. Anwar (2023) found that Smart TV can create a more dynamic and engaging learning environment. Ilmiyah and Muslih (2024) explained that the use of Smart TV increases students' interest in learning through the presentation of more varied instructional materials. Meanwhile, Sholichah and Efendy (2025) demonstrate that visualizing mathematical concepts via Smart TV boosts students' enthusiasm for learning, and Putri (2025) found that the use of Smart TV-based educational videos has a significant impact on elementary school students' motivation to learn mathematics.

On the other hand, the analyzed literature also highlights challenges in the implementation of Smart TVs, particularly regarding teacher readiness and the selection of learning content. The use of Smart TVs without thorough pedagogical planning tends to reduce the technology to merely a presentation tool, resulting in less-than-optimal effects on learning motivation.

DISCUSSION

This discussion section aims to address the research questions regarding the use of Smart TVs in mathematics education and their impact on children's learning motivation. Based on the synthesis of the analyzed articles, it can be concluded that the use of Smart TVs tends to have a positive impact on increasing learning motivation. This increase is reflected in greater attention, interest, participation, and engagement among students during learning activities. Thus, these findings indicate that Smart TVs have the potential to serve as an effective learning medium in supporting the mathematics learning process in the digital age.

Research results show that presenting material via Smart TVs in visual and audiovisual formats—such as videos, animations, and interactive simulations—can help students understand abstract mathematical concepts in a more concrete and systematic manner. This engaging presentation of material contributes to building students' self-confidence and fostering a positive attitude toward mathematics learning. These findings reinforce the view that the use of visual technology can enhance the quality of learning while improving students' learning experiences.

In addition to media factors, the success of using Smart TV is also significantly influenced by the teacher's role in designing and implementing instruction. The study's results indicate that Smart TV used in a planned manner, aligned with learning objectives, and integrated with active learning methods yields more optimal outcomes compared to passive use. This underscores that technology cannot stand alone but must be supported by educators' pedagogical competencies and digital literacy.

The findings of this study align with the concept of Technology-Enhanced Learning Environments proposed by Wang and Hannafin (2005), which emphasizes the importance of integrating technology to create interactive learning environments. Furthermore, the results of this study are also consistent with the research by Anwar (2023), Ilmiyah and Muslih (2024), Sholichah and Efendiy (2025), and Putri (2025), which state that visual and multimedia-based learning media can enhance student motivation, interest, and engagement. The consistency of these results indicates that the research findings have a strong empirical foundation.

The novelty of this study lies in the effort to synthesize and integrate various empirical findings through a Systematic Literature Review (SLR) approach to generate a more comprehensive understanding of the role of Smart TV in mathematics learning. Unlike previous studies, which were generally conducted within limited contexts, this study emphasizes that the effectiveness of using Smart TVs results from the interaction between technology, instructional design, and educator quality. Additionally, this study considers other

potential factors influencing learning motivation, such as students' intrinsic motivation, learning environment conditions, and institutional school support, as alternative explanations for the findings obtained.

From a theoretical perspective, the results of this study reinforce research on the integration of technology in mathematics education by emphasizing the importance of a student-centered and adaptive learning approach that keeps pace with the times. Practically, these findings can be utilized by teachers and schools as a foundation for designing effective, contextual, and student-centered Smart TV-based learning. Additionally, these findings can serve as a basis for policymakers in developing programs to enhance teacher competencies and advance digital learning resources.

Although this study makes a significant contribution, it has several limitations. The analysis is limited to articles available in specific open-access databases, meaning relevant studies may have been excluded.

Furthermore, the study's narrow focus on existing research prevents broad generalization. Additionally, the use of qualitative analysis risks introducing subjectivity in the data interpretation process. Given these limitations, future research is recommended to expand data sources, incorporate international databases, and combine literature reviews with field studies. Future research could also examine the impact of Smart TV use on other aspects beyond critical thinking skills, problem-solving, and long-term learning outcomes. Furthermore, studies on teacher training strategies for utilizing Smart TV need to be developed to ensure that technology-based learning can be implemented sustainably.

CONCLUSION

Based on the results of a systematic review of the research, it can be concluded that the use of Smart TVs in mathematics education has a positive impact on children's learning motivation. Through the presentation of material in visual and audiovisual formats, Smart TVs are able to create a learning environment that is more engaging, interactive, and relevant to students' needs, thereby helping them understand abstract mathematical concepts and increasing their engagement in learning activities.

This study is significant because it provides a comprehensive overview of the role of Smart TVs as a learning medium in the digital age. Furthermore, the findings of this study emphasize that the success of technology integration in learning is not solely determined by the availability of devices but also by well-planned instruction and teachers' pedagogical competence. Thus, appropriate technology integration can serve as a strategic alternative to enhance the quality of mathematics education and students' learning motivation.

Empirical findings gathered through the Systematic Literature Review method indicate consistent results from various previous studies regarding the effectiveness of Smart TVs as a learning medium. Therefore, the results of this study are worthy of serving as a reference for the academic community, education practitioners, and policymakers in developing and implementing innovative, adaptive, and sustainable technology-based learning models in the future.

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