

Developing Interactive Learning Media to Enhance Elementary School Students' Learning Motivation

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ABSTRACT

The low learning motivation among elementary school students remains a major challenge in the learning process. Conventional methods, which are often unengaging, make students quickly bored and passive. Therefore, the development of interactive learning media is needed to effectively and enjoyably enhance student involvement, interest, and enthusiasm. This study uses the Research and Development (R&D) method with the ADDIE model to develop interactive learning media. The development process includes needs analysis, learning strategy design, media creation, implementation, and effectiveness evaluation. Data were collected through observation, interviews, questionnaires, and documentation, and analyzed both qualitatively and quantitatively to assess the quality and effectiveness of the developed learning product. The implementation of interactive learning media has proven effective in increasing student motivation and engagement. The use of physical components, such as wooden map boards and cultural picture cards, provided a hands-on learning experience that deepened students' understanding. Despite challenges related to teacher adaptation and media accessibility, the benefits of this approach—especially in improving motivation and learning outcomes—are evident. Future research should explore the long-term impact on student knowledge retention and how to adapt the media for diverse cultural contexts. This study significantly contributes to the development of interactive learning media that can enhance student motivation and engagement in elementary education. By integrating physical components that support active learning, this research offers a new, effective approach for teaching cultural diversity. Additionally, it provides insights into the development of more adaptive and applicable media that can be implemented in various cultural contexts and used more widely in classrooms.

Keywords: Interactive Learning Media, Elementary School, Learning Motivation, Educational Technology.



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INTRODUCTION

Nowadays, in the education system, fostering student motivation is a very important component to create effective learning, especially at the elementary school level. Radil et al. (2023) and Dermitzaki (2025) emphasize that young learners often require more than just verbal explanations or textbook readings to fully comprehend concepts and stay engaged in class. Darling-Hammond et al. (2019) argue that professional teachers must not only master the subject matter but also be able to convey it in an engaging and meaningful way. The use of interactive learning media plays a significant role in this process, according to Adawiyah et al. (2024), as it serves as a bridge between abstract concepts and students' concrete understanding. Hossain (2024) points out that educational media helps clarify difficult content, enrich vocabulary, and bring lessons to life through visual, auditory, or kinesthetic engagement. Furthermore, Hidayat et al. (2023) highlight that in line with Indonesia's educational system, teachers are entrusted with creating a learning environment that is

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enjoyable, creative, and dialogical. Therefore, relying solely on lectures is no longer sufficient. To address the issues of student boredom and passivity in learning, interactive learning media need to be developed and implemented to enhance students' enthusiasm, participation, and motivation in learning.

Various studies have explored the development of learning aids in the form of cultural maps of Indonesia to enhance the quality of student learning. Romualdi and Sudrajat (2024) developed a product designed to increase students' learning motivation. Similarly, Handtke et al. (2019) created a replica of a cultural map, which included traditional houses and cultural cards, and was assessed as both engaging and feasible for use. Petropoulos et al. (2023) introduced an innovative map made from paper pulp, accompanied by cultural cards, which was proven to be valid, practical, and effective in enhancing learning motivation. Yasan and Yıldırım (2022) developed a digital version based on smartphones, which yielded high validity and attractiveness results. Additionally, Kholisunnada and Darmawati (2023) implemented the Numbered Heads Together model in their learning process, receiving positive feedback from students. These studies share a common approach in utilizing Research and Development (R&D) methodologies and focusing on Indonesia's cultural diversity. However, they differ in terms of the product form, development models, and the target grade levels. This study aims to highlight these differences by focusing on the needs analysis, development process, and the impact of the developed media on improving learning motivation among elementary school students.

The purpose of this research is to highlight the differences from previous studies by focusing on three main aspects: the analysis of learning media needs, the systematic development process of the media, and the evaluation of the impact of using the media on enhancing students' learning motivation in elementary schools. Thus, this study is expected to provide a more comprehensive overview of how the developed learning media aligns with students' needs and effectively encourages their enthusiasm for learning significantly. The benefits of this research include making an important contribution to the development of more targeted and effective learning media to increase motivation among elementary school students. The research results are expected to serve as a reference for teachers and education practitioners in selecting and developing media that suit the needs of learners. Furthermore, this study also enriches academic insights regarding the media development process and its practical impact on students' academic achievement and learning motivation.

Based on the objectives and benefits outlined, this study hypothesizes that a learning media development process that begins with a thorough needs analysis and follows a systematic approach will produce media that is well-aligned with the specific requirements of elementary school students. Consequently, the use of such media is expected to significantly enhance students' learning motivation. It is anticipated that by addressing students' actual needs and incorporating their preferences into the media design, the developed media will engage students more effectively, making learning experiences more meaningful and enjoyable. Furthermore, the study hypothesizes that the positive impact of this targeted media on motivation will translate into better academic performance and greater enthusiasm for learning activities. This suggests that educators who utilize carefully developed media can improve instructional outcomes and foster a more dynamic and interactive classroom environment. Ultimately, the findings are expected to demonstrate that the integration of needs-based and systematically developed learning media is a crucial factor in boosting elementary students' motivation and overall learning success.

RESEARCH METHOD

The research method employed in this study is Research and Development (R&D), utilizing the ADDIE model, as outlined by Umar et al. (2023). This model is particularly suitable for classroom-based learning because it emphasizes the systematic development of learning tools, including media that support and enhance the learning process, as noted by Abdulrahman et al. (2020). The ADDIE model, developed by Shelton and Saltsman (2006), consists of five essential stages: Analysis, Design, Development, Implementation, and Evaluation. Each stage plays a critical role in ensuring that the

instructional media created are effective and aligned with learning objectives. In the Analysis stage, Monib et al. (2025) argue that it is important to identify learners' needs and learning problems. The Design stage involves planning learning strategies and selecting appropriate media, as suggested by Spatioti et al. (2022). During the Development stage, the actual creation of media occurs. The Implementation stage involves using the developed media in a real classroom setting, while the Evaluation stage, according to Schildkamp (2019), measures the effectiveness of the media and identifies areas for improvement. This model ensures that the learning media is both pedagogically sound and practically applicable.

The data collection techniques used in this study included observation, interviews, questionnaires, and documentation, as noted by Klingebiel et al. (2024). These methods were employed to gather comprehensive information throughout the development process, aligning with the approach suggested by Paradis et al. (2016). Product testing was conducted in several stages, starting with expert validation involving three validators, followed by small-scale trials with 10 students, and large-scale trials involving 23 students from class 3A at MIN 1 Banyuwangi. The research utilized both qualitative and quantitative data types. Noyes et al. (2019) emphasize that qualitative data were used to describe the quality and characteristics of the developed product based on expert and user feedback, typically expressed in descriptive statements. Meanwhile, Sutton and Austin (2015) argue that quantitative data were used to measure validation results and trial outcomes numerically. The questionnaires used during the trials employed two types of measurement scales: the Likert scale and the Guttman scale, as discussed by Aini et al. (2018). The Likert scale was primarily used in expert validation to assess aspects such as content, design, and functionality. Average scores were calculated using a standard formula to determine the overall product quality, as recommended by Massof (2004).

The data analysis process is conducted after all data has been collected, with the aim of processing and interpreting the information to determine whether the research objectives have been successfully achieved, as stated by Lim (2024). According to Cole (2023), data analysis is a crucial component of any research, as it transforms raw data into meaningful information that adheres to scientific principles. Through this process, Ratan et al. (2019) argue that researchers can draw valid conclusions and effectively answer the research questions that were formulated earlier.

$$P = \frac{\sum X}{n} \times 100\%$$

Description:

P = Value

$\sum X$ = Total assessment score

n = Ideal total score

Student response data was obtained from the guttman scale questionnaire. To analyze the student response questionnaire using the following formula:

$$NPr = \frac{TS-e}{TS-Max} \times 100\%$$

Description:

NPr = Value

TS – e = Total obtained by the student

TS – Max = Total maximum score

In conclusion, the data analysis process is critical not only for determining whether research goals have been achieved but also for ensuring that the methods used to evaluate outcomes are rigorous and grounded in scientific principles. The use of structured formulas like the one mentioned helps in quantifying results, which is particularly useful in educational research to assess the effectiveness of learning tools or methods. However, a potential limitation of this approach is that it does not account for qualitative aspects of learning, such as individual learning progress or engagement, which are equally important for a holistic evaluation of student outcomes. Therefore, a

balanced approach that integrates both quantitative and qualitative data could offer a more comprehensive view of the effectiveness of the educational interventions.

RESULTS AND DISCUSSION

Results

Media Development Analysis

Needs analysis for media development is a vital first step in creating effective learning tools. This stage focuses on identifying the needs of students, teachers, and current learning conditions, as well as uncovering any challenges or issues in the teaching and learning process. By addressing these challenges, learning media can be designed to better support educational goals. The analysis helps to ensure that the media developed is relevant, tailored to the specific needs of learners, and effective in enhancing the learning experience. Ultimately, a thorough needs analysis ensures that the media aligns with educational objectives and provides solutions to improve teaching and learning outcomes.

Table 1. Analysis of Media Development Needs

No	Analysis	Explanation
1	Analysis of student characteristics	The analysis of student characteristics focuses on understanding their behavior during learning. Observations and interviews with homeroom teachers show that students are highly active, especially when engaged with stimuli and direct involvement. This aligns with the concrete operational phase in elementary school children, making them more responsive to active participation.
2	Analysis of needs	In the needs analysis, pre-observations and interviews with homeroom teachers revealed that the learning media were simple, such as printed images and surrounding objects. While media availability was adequate, its use and variation remained limited.
3	Analysis of curriculum	Curriculum analysis ensured that the developed products aligned with the applicable curriculum. The Merdeka curriculum was used in several classes, while classes 3 and 6 followed the 2013 Curriculum. This analysis helped determine Core Competencies and Basic Competencies to guide the creation of indicators and learning objectives.

Based on the three analyses of student characteristics, media needs, and the curriculum, it can be concluded that the development of learning media at Madrasah Ibtidiyah must be customized to the actual conditions observed in the field. Students in Class 3A show high levels of activity, especially when actively involved in the learning process. Therefore, the media developed should provide interactive and engaging stimuli to capture their interest and enhance their learning experience. This aligns with the concrete operational phase of elementary school children, where they are most responsive to hands-on participation. However, the current use of learning media is still limited to simple tools such as printed images and surrounding objects, which lack sufficient variation. This highlights the need to create more innovative and diverse media to effectively address learning challenges and optimize engagement.

Moreover, considering the differences in the curriculum applied in the madrasah, media development must take into account both the Merdeka Curriculum and the 2013 Curriculum. This approach ensures that the media and learning tools are aligned with the learning objectives and indicators set out in both curricula. By integrating these two frameworks, the developed media can be more accurate and relevant to current educational policies. Furthermore, such alignment guarantees that the media supports all students, regardless of the curriculum they are following. Therefore, media development must be conducted in an integrated and cohesive manner to provide an optimal learning experience, one that can effectively cater to the diverse needs of students and contribute to achieving educational goals.

Media Development

The development of the PEKAN media involves several stages, including the design of the product and its components. PEKAN media is a specially designed map created by researchers to showcase various aspects of Indonesian culture, such as traditional houses, clothing, dances, musical

instruments, and typical foods. The map and its content were edited using the Canva application to make it visually appealing and informative. This product is then printed into various components, including hanging banners, cultural cards, game rule cards, and a guidebook. The guidebook contains material on cultural diversity across Indonesia's 34 provinces, tailored specifically to support the Civic Education curriculum. It focuses on cultural diversity topics for grade III students, specifically for theme 5, subtheme 1, in the even semester. The PEKAN media is designed to engage students and enrich their understanding of Indonesia's rich cultural heritage, making learning more interactive and enjoyable.

Table 2. Media Development Results

No	Media Development	Explanation
1		The map board is made of wood measuring 51 x 51 cm, covered with stickers of Indonesian map images designed using the Canva application. This board is also equipped with handles and hooks, making it easy to carry and use in various learning activities.
2		This guidebook contains instructions for using media and a summary of the material presented in the form of illustrations or images. The book design was created using the Canva application and then printed as a physical book to make it easier for users to understand how to use learning media effectively.
3		The results of the development of PEKAN media include several stages, namely the form of the product and its components. PEKAN media is in the form of a map specially designed by researchers to display various cultures such as traditional houses, traditional clothing, traditional dances, musical instruments, and typical foods edited using the Canva application.

Based on the results of the development of PEKAN media consisting of a 51 x 51 cm wooden map board with an Indonesian map sticker design, a guidebook containing instructions for use and a summary of illustrative material, and media products that display various Indonesian cultures, it can be concluded that this media is well designed and comprehensive. The use of the Canva application in the design shows the use of digital technology to improve the visual quality and appeal of the media. However, although this media is quite complete and practical, it is necessary to pay attention to the sustainability of development so that the media remains relevant and innovative, and is supported by ongoing evaluation to ensure its effectiveness in improving students' understanding of cultural material as a whole.

Implementation and Evaluation of Media Development

The development and evaluation of the PEKAN media in this study follow a systematic approach, aiming to create effective and engaging learning tools for students. The process began with a needs analysis, which identified the characteristics of Class 3A students, media requirements, and the relevant curriculum. Following this, the media was implemented through a small-scale trial with 10 students and a large-scale trial with 23 students to assess its effectiveness and collect feedback. The trials were designed to gather detailed student responses using a Guttman scale questionnaire. The results showed a high level of student engagement and positive feedback, with an average response rate of 98.37%. Based on this success, the final evaluation confirmed that PEKAN media was suitable for use in Civic Education classes, enhancing students' learning experiences.

Table 3. Research Findings on PEKAN Media Development and Evaluation

Stage	Scale	Assessment Method	Results
Implementation (Small Scale Trial)	Small scale (10 students)	Field test (to anticipate obstacles)	Small scale trial conducted to identify potential issues before full implementation.

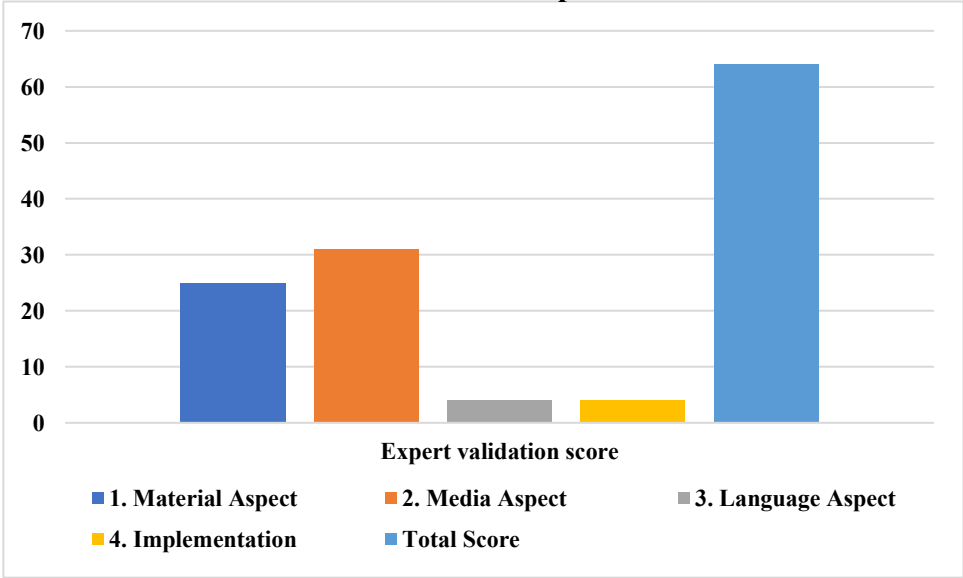
Implementation (Large Scale Trial)	Large scale (23 students)	Guttman scale questionnaire	Average student response: 98.37%. PEKAN media categorized as very good based on validity criteria.
Evaluation (Final Assessment)	Final evaluation of PEKAN media	Validation data, materials, practicality, and student responses	PEKAN media deemed suitable for use in Civic Education for class 3A MIN 1 Banyuwangi.

The implementation and evaluation of PEKAN media revealed promising results, with student responses showing a high level of engagement and satisfaction. The positive feedback, reflected in the 98.37% average response rate, indicates that the media is both effective and engaging, meeting the learning needs of Class 3A students. However, while the media was considered suitable for use in the classroom, further research is needed to assess its long-term impact on learning outcomes. The small-scale trial effectively identified potential obstacles, and the large-scale trial confirmed the media's feasibility in real classroom settings. Despite these successes, the study highlighted the importance of ongoing evaluation and adaptation, as different student groups may require different learning tools. Future iterations of PEKAN media should explore more diverse content, multimedia integration, and further alignment with curriculum updates to ensure continued relevance and effectiveness in supporting student learning and engagement.

Results Of the Assessment of the Feasibility of Learning Media

The results of the assessment of the feasibility of learning media show the extent to which the media meets the quality standards set in the development process. This assessment includes aspects of design, content, practicality, and user response, which are the main indicators of the success of the media in supporting the learning process.

Chart 1. Results of Practical Expert Validation Test



Based on the final calculation results from the practicality expert, PEKAN media received a score of 91.43%. Referring to the validity criteria table, this score categorizes the media as "very good," indicating that it is highly suitable for use in the learning process. PEKAN media is considered very worthy to be implemented as a learning tool, particularly for teaching cultural diversity material in Indonesia. This high rating reflects the media's effectiveness in engaging students and enhancing their understanding of cultural topics, making it a valuable resource in the classroom.

Results of Observations on Students' Learning Motivation

The data on students' learning motivation was collected through observations to evaluate their engagement and responses to learning activities. The results show that most students demonstrated

high levels of motivation, with the majority scoring 8 out of 8 on assessment indicators, achieving a score of 100%. Only a few students received scores of 7, indicating a slight reduction in motivation, which still reflects a strong engagement level. This table provides a clear overview of student participation, offering insight into the effectiveness of the implemented learning methods and the engagement of students in the learning process.

Table 4. Results of observations of students' learning motivation

No	Name	Assessment Indicators (Yes)	Assessment Indicators (No)	Total Score	Score (%)
1	AMR	8	0	8	100
2	ANP	8	0	8	100
3	AAY	8	0	8	100
4	AKH	7	1	7	87.5
5	DMA	7	1	7	87.5
6	DHR	8	0	8	100
7	DEF	8	0	8	100
8	GB	8	0	8	100
9	IZM	8	0	8	100
10	INAS	8	0	8	100
11	KRP	8	0	8	100
12	MDA	7	1	7	87.5
13	MDF	8	0	8	100
14	MRR	8	0	8	100
15	MR	8	0	8	100
16	MZM	8	0	8	100
17	MH	8	0	8	100
18	RMB	8	0	8	100
19	RAN	8	0	8	100
20	RAW	8	0	8	100
21	SARM	8	0	8	100
22	SR	8	0	8	100
23	VBA	8	0	8	100
Total score obtained			181		2.262,5

The results from the observation of students' learning motivation suggest that the learning methods applied had a highly positive impact, as most students scored 100%, reflecting strong enthusiasm and participation. However, there were some students (around 3 out of 23) who scored slightly lower at 87.5%. This indicates that while the overall response to the learning activities was overwhelmingly positive, there are some areas where student motivation could be further enhanced. These students may require additional support or more varied activities to maintain their engagement. The high percentage of students achieving full scores shows that the learning media and methods used were effective in fostering interest and involvement. In conclusion, the findings suggest that the learning environment is highly motivating for most students, but slight variations in motivation levels warrant further exploration to ensure consistency across all students. Future strategies could focus on identifying and addressing the factors that influenced the lower scores.

Discussion

Effectiveness of Interactive Learning Media in Increasing Student Motivation

The effectiveness of interactive learning media in enhancing student motivation is demonstrated through the development and implementation of the media, as emphasized by Fang et al. (2024). In comparison to previous studies, such as Lian and Xie (2024), who highlighted the high feasibility and attractiveness of digital-based cultural maps, this research introduces innovation by focusing on physical display and print-based media. According to Krestanova et al. (2021), the media facilitates tangible interaction through components like wooden map boards, cultural picture cards, and colorful guidebooks, which actively engage students in the learning process. Markey et al. (2023) suggest that these components foster a hands-on learning experience that enhances understanding and retention of cultural diversity material. Unlike digital media, Ohara (2023) points out that this media relies on

physical materials, offering students a more dynamic and sensory-driven learning experience. This form of media, as argued by these scholars, supports an immersive learning environment that promotes direct interaction with educational tools, potentially increasing student participation and motivation.

Validation results from this study further emphasize the media's effectiveness, with media experts rating it at 98.12%, material experts at 91.1%, and practicality experts at 91.43%, resulting in an overall average score of 93.55%, placing it in the "very good" category. González-Valencia et al. (2022) argue that such high ratings reflect the media's suitability for classroom use, particularly in Citizenship Education on cultural diversity topics. Abacioglu et al. (2023) also highlight that the positive feedback from experts in various fields confirms the media's quality and its potential to significantly improve the learning experience. Mebert et al. (2020) further suggest that when implemented in the classroom, the media showed clear success in boosting students' enthusiasm for learning. The interactive and hands-on nature of the media motivated students to participate actively, aligning with constructivist learning principles. Lin et al. (2017) notes that effective media helps teachers deliver content more effectively, increases student motivation, and leads to improved learning outcomes in a shorter period of time.

The development and implementation of the media effectively demonstrate the positive impact of interactive learning tools on student motivation, as highlighted by Daryanes et al. (2023). The validation process, with strong ratings from media, material, and practicality experts, reinforces the media's suitability for classroom use, particularly in teaching cultural diversity, as noted by Bozdağ (2022) and Manganello and Baldacci (2024). The physical and tangible nature of the media, using components like wooden maps and cultural cards, offers a sensory-driven learning experience that engages students actively, a view supported by Cho (2021). This approach aligns with constructivist principles, encouraging students to participate and learn through direct interaction. However, while the results are promising, Olsson et al. (2022) suggest that the long-term impact on learning outcomes should be monitored to assess the sustainability of this motivation boost. Singh et al. (2021) recommend future research exploring the integration of digital and print media to create a more hybrid learning experience, enhancing engagement and knowledge retention. Overall, the media is seen as a highly effective tool for fostering student motivation and improving the learning environment, especially in Citizenship Education.

Implementation of Interactive Learning Media in Elementary Education

The development and implementation of the media in Civics Education for Class 3A demonstrates a structured effort to design interactive learning tools that align with the principles of active and meaningful learning in elementary education, as emphasized by Marougkas et al. (2023) and Børte & Lillejord (2024). The creation of the media was driven by the need to stimulate student enthusiasm and participation through engaging learning resources, as highlighted by Charline et al. (2023). Students in the classroom showed increased engagement when media with physical components was introduced, supporting the findings of Pandita & Kiran (2023). The media was designed using Canva to ensure it was visually appealing and well-organized. It includes elements such as a wooden map board, cultural picture cards featuring traditional houses, clothing, dances, musical instruments, and foods, along with magnetic sticks, rule cards, and a colorful guidebook, as suggested by Sugiarni et al. (2024). This carefully created product engages students through hands-on materials, enhancing their interaction with the content and ensuring that the learning process is both effective and enjoyable.

The media facilitates two-way interaction and directly involves students in the learning process, transforming the experience into a more dynamic, student-centered approach, as noted by Gan et al. (2015). The media design emphasizes crucial features such as durability, portability, and accessibility, which are vital for effective classroom use, as highlighted by Kerimbayev et al. (2023). The physical materials are designed to withstand repeated use and are easy for both teachers and students to handle during lessons, as suggested by Martin-Alguacil et al. (2024). The inclusion of various components,

such as magnetic sticks and guidebooks, allows students to engage with the content in different ways, catering to multiple learning styles, as emphasized by Rehman et al. (2022). Additionally, the repetitive exposure provided by the visual components, such as the culture-themed picture cards, enhances students' memory retention, supporting Sankalaite et al.'s (2023) findings. This aligns with the cognitive theory that learning is more effective when students interact with content multiple times, as proposed by Paas & van Merriënboer (2020). In sum, the media serves as a practical and engaging educational tool, reinforcing curriculum goals while promoting a deeper understanding of Indonesia's cultural diversity in a fun and interactive manner.

The development and implementation of the media in Civics Education demonstrate a successful integration of interactive and engaging learning tools aimed at enhancing student participation and enthusiasm, as highlighted by Ullah and Anwar (2020) and Haleem et al. (2022). By combining physical elements such as wooden map boards, cultural picture cards, and guidebooks, the media effectively supports a student-centered learning environment, which Shayan et al. (2022) emphasize is crucial for fostering active participation. This hands-on approach caters to different learning styles and encourages active involvement, aligning with the constructivist principles proposed by Richter et al. (2024). The design focuses on practicality, durability, and portability, ensuring the media's suitability for classroom use, as noted by Pimdee et al. (2024). While the study shows positive results in student engagement, Bukhatir et al. (2023) suggest further research into the long-term impact on student learning outcomes and knowledge retention. Additionally, Al-Saadawi et al. (2024) recommend exploring how the media can be adapted for diverse cultural contexts across Indonesia to further improve its relevance. Overall, the media represents a promising model for interactive, culturally rich educational resources in elementary education.

Challenges and Opportunities in Using Interactive Learning Media for Elementary Students

The implementation of interactive learning media in class 3A provides both challenges and opportunities in enhancing students' learning experiences. Purkarthofer and Mäntysalo (2022) highlight the potential of such media to improve the overall learning process. One of the most significant benefits identified is the ability of the media to increase student motivation and engagement. Alshamaila et al. (2023) also emphasize that interactive media fosters a more engaging learning environment, which can enhance students' interest and enthusiasm. A student response test conducted with students yielded overwhelmingly positive feedback, indicating that the media effectively presents educational content in a manner that is both enjoyable and easily understood. This is in line with Keller et al. (2018), who argue that interactive media can significantly improve the learning experience by making it more dynamic and participatory. Furthermore, research by Clark et al. (2016) and Zhao et al. (2023) supports the idea that interactive media, whether digital or physical, has the potential to transform passive learning into an active process, thereby increasing students' engagement and involvement in their education. These findings underscore the importance of incorporating interactive media into the learning environment, as it successfully captures students' attention and contributes to a more engaging and participatory learning experience.

Despite the positive feedback, challenges remain in the preparation and implementation of interactive media in the classroom. Hadders-Algra (2020) argues that teachers must adapt to new tools and methods, which may necessitate additional training or a significant time investment. This process of adaptation could pose a barrier, particularly for teachers who are less familiar with technology or interactive teaching methods. Simon and Zeng (2024) further point out that this lack of familiarity can hinder the effective integration of such media in the classroom. Moreover, ensuring that the media is accessible, durable, and well-suited to various learning environments is a key concern. Botelho (2021) emphasizes the need for the media to be designed in a way that it can be easily used in different settings, taking into account factors like accessibility and sustainability. Teachers must also ensure that the media is not only educational but also practical and adaptable to the diverse needs of students, as noted by Thelma et al. (2024). These challenges underline the importance of providing adequate support and resources for teachers, enabling them to maximize the

potential of interactive learning tools. Grassini (2023) suggests that overcoming these obstacles is crucial to ensuring that interactive media can be effectively implemented in classrooms across various schools and educational contexts.

Despite these challenges, the use of interactive media presents a valuable opportunity for educators. Cheung (2010) argues that interactive media directly involves students in the learning process, offering a chance to incorporate cultural context through colorful, hands-on materials. This approach encourages a deeper understanding of the content and strengthens student motivation. Hanaysha et al. (2023) further support this by suggesting that such media enhances psychological engagement and stimulates interest, which contributes to a more active learning experience. Additionally, the interactive nature of the media aligns with the view that media helps teachers deliver content more effectively while simultaneously aiding students in understanding it better. Sato et al. (2024) and Clemente-Suárez et al. (2024) emphasize how interactive tools can benefit both teachers and students by creating an environment that promotes mutual understanding. This dual benefit significantly increases students' motivation, as they feel more involved and engaged with the material. Thus, the use of interactive learning media not only supports the curriculum but also fosters a more active, engaging, and enjoyable learning environment. Ultimately, this leads to improved educational outcomes, highlighting the importance of integrating such tools into teaching practices.

CONCLUSIONS

The implementation of interactive learning media has proven to be highly effective in enhancing student motivation and engagement, as demonstrated by the overwhelmingly positive student feedback. The use of physical components, such as wooden map boards, cultural picture cards, and guidebooks, provided a hands-on learning experience that supported students' active participation and deeper understanding of cultural diversity. The media's design, which prioritizes durability, portability, and accessibility, ensures its suitability for classroom use. While challenges related to teacher adaptation and media accessibility remain, the benefits of this interactive approach—such as increased motivation and improved learning outcomes—are clear. The media fosters an engaging, student-centered environment that aligns with constructivist principles. Further research should explore the long-term impact on student knowledge retention and investigate how to adapt the media for diverse cultural contexts. Overall, the study highlights the potential of interactive media to transform learning experiences in elementary education.

The theoretical implication of this study supports the constructivist principle, which emphasizes that effective learning occurs when students are actively engaged in the learning process through interaction with the material. This research reinforces the idea that physical learning media can enhance student motivation and understanding, particularly regarding cultural diversity. It also shows that media engaging multiple senses can strengthen memory retention and improve learning quality. Practically, the study demonstrates that the use of interactive learning media in the classroom increases student participation and helps them comprehend the material more thoroughly. It also provides valuable insights for educators to adapt learning tools that capture student attention, address teacher adaptation challenges, and ensure the media is accessible and durable. Therefore, teacher training is recommended to maximize the potential of interactive media in the classroom.

This study has several limitations that should be addressed in future research. Firstly, the sample size of 23 students may not fully represent the diverse learning styles and preferences found in larger populations, limiting the generalizability of the results. Additionally, the study focused only on one specific context, which may not reflect how interactive media performs across different educational settings or subjects. Future research should consider a larger and more diverse sample, as well as explore the long-term impact of interactive media on student learning outcomes and retention. Moreover, further studies could investigate the integration of digital and print-based media to create a more hybrid learning experience, enhancing engagement and knowledge retention. Finally, examining how interactive media can be adapted to various cultural contexts would provide deeper insights into its potential for broader application in diverse educational environments.

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