

Analysis of the Need for Animation-Based STEAM Learning Media in IPAS Learning at MI Plus Ja-Alhaq Bengkulu City

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Abstract: Education establishes a strong foundation; however, individual growth continues to evolve alongside changes in society and life demands. Lifelong learning enables us to adapt, innovate, and confront new challenges more effectively. This research employs a qualitative descriptive approach, focusing on 25 students as subjects. Data were collected through two primary instruments: a questionnaire distributed to students and interviews with teachers. The data obtained were subsequently analyzed descriptively to reveal findings related to the needs for animated learning media. Results from questionnaires completed by fifth-grade teachers indicated that the utilization of STEAM-based learning media, particularly animations, in the teaching process of IPAS (Integrated Science Studies) material concerning Landscape features is still suboptimal. This is reflected in teachers' tendencies to adopt more passive and less varied teaching methods. Furthermore, 80% of students possess and are capable of operating smartphones, with 80% preferring animation-based learning media. Additionally, 80% of students acknowledged difficulties in understanding ecosystem material. A significant 96% of students expressed greater enthusiasm for learning when using STEAM-based animated learning media.

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INTRODUCTION

The process of continuous learning is becoming increasingly vital in the context of modern education. Education serves as a foundation for individuals' growth, allowing them to adapt to changing times through lifelong learning. In this regard, education does not merely facilitate the transfer of knowledge; it also fosters the development of individual potential, particularly for students, through various quality educational resources. Effective learning strategies that incorporate technology have proven to enhance the teaching and learning processes.

With the rapid advancement of technology and globalization, the utilization of technology-based media in education has become crucial. Modern educational materials need to be complemented with technology-based media to respond to technological developments and enhance learning effectiveness. Research on the integration of STEM (Science, Technology, Engineering, and Mathematics) indicates that learning methods incorporating creativity and innovation, such as the use of animation media, can significantly increase student interest and engagement in the learning process.

The use of animation media in STEAM (Science, Technology, Engineering, Art, and Mathematics) education has a significant impact on students' creative thinking abilities. Digital media can enhance creative thinking among students by providing engaging visualizations. The use of animation not only aids in conveying information but also encourages active learning methods. Animated media can simplify complex topics, enabling students to achieve a deeper and more comprehensive understanding of the material.

Education in Indonesia is adapting to curriculum developments that facilitate more flexible and interactive learning. The "Kurikulum Merdeka" offers educators the freedom to choose teaching materials suitable for their students' needs and interests. Interactive multimedia learning has been identified as an effective method within educational contexts, particularly in integrating subjects.

Finally, research demonstrates that employing diverse teaching strategies, including the use of animation media, contributes significantly to understanding interrelated concepts among different disciplines. Consequently, the development and integration of animation-based learning media within educational frameworks are expected to enhance student motivation and overall teaching effectiveness.

METHOD

The study employs a qualitative descriptive approach to identify the needs for animation-based learning media among fifth-grade students at MI PLUS JA-ALHAQ in Bengkulu City. A total of 25 students participated as subjects in this research. Data were collected through two primary instruments: a questionnaire distributed to the students and interviews with the teachers. The questionnaire was designed to explore the students' perceptions regarding their needs for animation-based learning media. Meanwhile, the interviews with the teachers intended to gather further information regarding the classroom learning conditions. The obtained data were then analyzed descriptively to uncover findings related to the needs for animation learning media that align with the characteristics of the students.

RESULT AND DISCUSSION

Interview sheet and questionnaire for the analysis of students' needs containing indicators of the need for animation-based learning media on ecosystem material. The

indicators of these questions are divided into 8 items, adapted from the research indicators by Maharani et al. (2023). These questions relate to learning activities and learning media. The respondents of the questionnaire consist of teachers and students from class VC. The indicators in the questionnaire provided to the students are in the form of printed sheets.

Based on the results of a survey conducted by the fifth-grade teacher of class V C regarding animation-based learning media integrated with STEAM on ecosystem material, it was found that the use of learning media utilizing technology is still below optimal levels. This is evident from the tendency of teachers to employ passive and less varied teaching methods, which undoubtedly impacts students' learning outcomes. The students' daily assessment results indicate that their understanding of ecosystem material remains within the categories of sufficient and lacking. This highlights an urgent need to improve the quality of learning through technology and innovation.

The STEAM approach, which integrates science, technology, engineering, arts, and mathematics, can be utilized to produce more effective learning media. STEAM signifies that learning is not just about delivering information, but also creating holistic and interdisciplinary learning experiences (Belbase, 2019). The integration of STEAM in education can enhance student engagement and facilitate active learning, where students not only receive information but also process and apply it within a broader context (Ng et al., 2022). Furthermore, educational innovations based on projects, business simulations, and collaboration between educational institutions, industry, and government are crucial in building a resilient and sustainable learning ecosystem (Herlina & Wahira, 2024).

According to research, the use of animation-based learning media can create a more engaging learning environment and support a better understanding of the taught material. This media serves to incorporate visual elements that can enhance appeal and facilitate a deeper comprehension of complex concepts such as ecosystems (Li et al., 2022). Additionally, the integration of technology in education can assist teachers in delivering material more dynamically, which in turn can positively influence students' learning outcomes.

In the educational context, it is essential to adopt a learning model that emphasizes collaboration and active participation from students. Through more interactive and project-oriented methods, students are provided with opportunities to engage directly in the learning process, which in the long run can lead to a better understanding and real application of their knowledge (Li et al., 2022; Ng et al., 2022). The utilization of STEAM-integrated animation-based learning media is expected to address the issues of limited media variation and teaching methods employed by teachers, as well as contribute to the improvement of students' learning outcomes.

The results of the needs analysis conducted among students at MI PLUS JA-ALHAQ in Bengkulu City show an interesting development regarding the preferences and accessibility of learning media, particularly animation-based media in the teaching of ecosystem materials. According to the data obtained, 80% of students own Android smartphones and are able to use these devices proficiently. Despite the available technological facilities, the use of smartphone-based media for learning remains minimal, with the majority of teachers relying solely on textbooks as the primary source of education (Utami et al., 2023; Siddiq et al., 2020). This indicates the necessity for a more varied and engaging integration of media to enhance students' learning experiences.

The preference of students for animation-based learning media is reflected in the fact that 80% of them prefer this method. They feel that learning through animation media can alleviate the boredom often associated with traditional methods. Additionally, 96% of surveyed students expressed a desire to learn with greater enthusiasm if animated learning media were used alongside the STEAM (Science, Technology, Engineering, Arts, Mathematics) approach (Sunami & Aslam, 2021; Semara & Agung, 2021). Previous research has shown that the implementation of the STEAM model with animation media is also capable of enhancing students' motivation and learning outcomes (Afrilia et al., 2022; Hapsari & Zulherman, 2021).

Challenges faced by students in understanding ecosystem materials, as reported by 80% of respondents, also require attention. Approximately 62% of them stated that difficult-to-understand material is the primary cause, while the remaining 30% felt that the absence of learning media contributes to this issue (Nurhayati, 2024). Research indicates that the use of animation media can aid in visually explaining complex concepts, thereby facilitating students' understanding (Nuraeni et al., 2023; Novita & Novianty, 2020). The advantages of animation in education are evident from its ability to present information in a more engaging and memorable manner, as well as to provide an interactive learning experience (Sudiarta & Sadra, 2016; Salsabila et al., 2023).

Therefore, the development of animation-based learning media is essential to meet the high demand from students for engaging and effective media. The ADDIE model (Analyze, Design, Development, Implementation, Evaluation) can be applied to produce learning media that is not only captivating but also aligned with the curriculum and the needs of students in the classroom (Farindhni, 2018; Pepadu et al., 2022). Through these steps, it is hoped that the use of animation media will not only enhance students' learning motivation but will also significantly contribute to academic achievement in ecosystem materials at MI PLUS JA-ALHAQ.

CONCLUSION

In conclusion, the analysis of students' needs regarding animation-based learning media on ecosystem material indicates a pressing requirement for enhancing technological integration within educational practices at MI PLUS JA-ALHAQ. The predominant use of traditional, passive teaching methods has resulted in insufficient comprehension of ecosystem topics among students, as shown by their assessment results indicating a lack of understanding, although specific citation support for this claim is unavailable. The implementation of the STEAM approach, which blends various disciplines, offers a promising framework for fostering engagement and facilitating active learning experiences that can significantly improve learning outcomes, as suggested by González-Pérez and Soledad (González-Pérez & Soledad, 2022). Moreover, the high preference for animation-based teaching indicates that such media can invigorate the learning process, making it more engaging and effective, supported by insights on the dynamics of engagement in digital learning environments (Ifenthaler et al., 2020). The necessity for collaborative, interactive learning processes further emphasizes the importance of adopting innovative strategies that incorporate technology to better serve students' educational needs, though citation support for this particular assertion is limited.

Moving forward, it is essential for educators to embrace the development of animation-based learning media, utilizing frameworks such as the ADDIE model to ensure that these resources are systematically designed and aligned with curriculum standards. This approach should prioritize the creation of visually stimulating and interactive content that meets the distinct learning preferences of students, thereby actively combating the issues associated with traditional teaching methods. By fostering a learning environment that encourages the use of advanced technology and integrated teaching strategies, such as those found in STEAM education, it is likely that students will exhibit enhanced motivation and a more profound understanding of complex concepts within the ecosystem content area. Thus, educators and policymakers must take proactive steps to facilitate the integration of these innovations into educational settings, ultimately striving for a more engaging and enriching learning experience for all students.

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