Development of PowerPoint Learning Media Using 3D Animation Features for Science Subjects at MTs Negeri 1 Sidenreng Rappang

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Abstract

Animated 3-dimensional PowerPoint is teaching material that is packaged interactively to foster student motivation and learning motivation. The aim of this research is to determine the results of the development of 3-dimensional animated PowerPoint and the level of validity and practicality of 3-dimensional animated PowerPoint in class VIII B science studies at MTs Negeri 1 Sidenreng Rappang. The method applied is Research and Development (R&D) with the ADDIE research and development model, which consists of five stages: analysis, design, development, implementation and evaluation. Data analysis in this research is quantitative data analysis in the form of questionnaires for material and media validators, questionnaires for teacher and student responses. The research results show that the results of the development of 3-dimensional animated PowerPoint are classified as very valid for use with an overall percentage of 95.5% and the results in the practicality test show that 3-dimensional animated PowerPoint meets the very practical criteria with a percentage value of 98%. This means that the 3-dimensional animated PowerPoint developed is suitable for use in class VIII B science learning at Mts Negeri 1 Sidenreng Rappang.

Keywords: *Development, Learning Media, PowerPoint, 3 Dimensional Animation, Science.*

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Abstrak

PowerPoint 3 dimensi animasi merupakan bahan ajar yang dikemas secara interaktif untuk menumbuhkan motivasi dan motivasi belajar siswa. Tujuan dari penelitian ini adalah untuk mengetahui hasil pengembangan PowerPoint 3 dimensi animasi dan tingkat ke validan dan kepraktisan PowerPoint 3 dimensi animasi pada studi IPA kelas VIII B di MTs Negeri 1 Sidenreng Rappang. Metode yang diterapkan yakni Research and Development (R&D) dengan model penelitian pengembangan ADDIE, yang terdiri dari lima tahap: analisis, desain, pengembangan, implementasi, dan evaluasi. Analisis data pada penelitian ini adalah analisis data kuantitatif berupa angket untuk validator materi dan media, angket untuk respon guru dan siswa. Hasil penelitian menunjukkan bahwa hasil pengembangan PowerPoint 3 dimensi animasi tergolong kategori sangat valid untuk digunakan dengan persentase perolehan keseluruhan sebesar 95,5% dan perolehan pada uji kepraktisan menunjukkan bahwa PowerPoint 3 dimensi animasi memenuhi kriteria sangat praktis dengan nilai persentase 98%. Hal ini bahwa PowerPoint 3 dimensi animasi yang dikembangkan termasuk layak untuk digunakan pada pembelajaran IPA kelas VIII B Mts Negeri 1 Sidenreng Rappang.

Kata kunci: Pengembangan, Media Pembelajaran, PowerPoint, 3 Dimensi Animasi, IPA.

INTRODUCTION

Education plays a vital role in producing human resources who are competitive and capable of competing at a global level. In this era of globalization, the quality of education becomes the key factor in preparing the younger generation to be competent. Therefore, improving the quality of education should be a central focus in the development of educational systems worldwide, including in Indonesia.

Teachers, as educators, play a pivotal role in enhancing the quality of education. As facilitators of the learning process, teachers are expected to conduct quality, innovative, and effective teaching. According to Law No. 14 of 2005 of the Republic of Indonesia, teachers' responsibilities include planning, implementing, and evaluating the learning process in schools. With the skills and abilities they possess, teachers can create engaging, effective, and relevant lessons that cater to students' developmental needs.

However, one of the major challenges teachers face is how to convey complex and abstract material in a way that students can easily understand. One solution that can be applied to improve students' comprehension is the use of appropriate teaching media. Teaching media helps present lessons in a more engaging and interactive manner, thus enhancing students' motivation to learn.

This research focuses on the development of learning media based on 3D animated PowerPoint, which is expected to assist students in understanding the subject matter, especially in the field of Science (IPA). This learning media is designed to make abstract concepts, such as the human digestive system, more concrete and interactive through visual displays that are easier for students to grasp.

The rapid advancement of information technology has also opened up significant opportunities in the field of education. The use of technology in teaching and learning can broaden access to information and enrich students' learning experiences. 3D animated PowerPoint is one example of utilizing technology in the classroom. With its 3D animation features, this media can clarify complex concepts and make learning more engaging and enjoyable for students.

Various studies have shown that the use of audiovisual media, such as animated PowerPoint, can improve students' understanding and retention of the material taught. For example, research by the Pusdiklat Kemendikbud (2016) revealed that the use of teaching media can enhance students' retention rates, with audiovisual media improving recall by up to 30% compared to traditional teaching methods.

The development of this 3D animated PowerPoint learning media is expected to offer a solution for teachers to overcome challenges in delivering Science (IPA) lessons. Additionally, this study aims to evaluate the validity and practicality of this media for use in the classroom, specifically for grade VIII B students at MTs Negeri 1 Sidenreng Rappang. The results of this research are expected to contribute positively to the development of technology-based learning media that teachers can use to improve the quality of their teaching.

Therefore, this research will investigate how the 3D animated PowerPoint media is developed, tested, and evaluated in terms of its validity and practicality. By using the ADDIE development model, which includes five stages—analysis, design, development, implementation, and evaluation—this study aims to produce effective, efficient, and beneficial learning media for students to better understand Science (IPA) topics.

RESEARCH METHOD

This research employs a quantitative approach to calculate the average scores of the product quality. The type of research used is Research and Development (R&D), specifically using the ADDIE model, which consists of five stages: Analysis, Design, Development, Implementation, and Evaluation. The primary goal of this research is to develop a reliable

and beneficial learning media for Science (IPA) lessons, particularly for the topic of the human digestive system.

In the Analysis phase, the researchers identify the problems faced by teachers and students in the learning process. Through observations and preliminary assessments, it was found that the school frequently employed face-to-face learning but seldom used learning media. This analysis phase also involved identifying the need for an effective learning tool to help explain complex and abstract scientific concepts to students.

The Design phase involves the creation of an initial prototype of the learning media, which in this case is a PowerPoint presentation with 3D animations. The design considers both the content and the visual elements, ensuring that the media aligns with the curriculum and can effectively convey the material in a student-friendly and interactive way.

In the Development phase, the prototype is further developed and refined based on feedback from material and media validators. The learning media is continuously improved to ensure it meets the necessary criteria of validity and practicality. This phase includes the incorporation of 3D animation features that enhance the visual representation of the human digestive system, making abstract biological concepts more tangible for students.

During the Implementation phase, the developed media is tested in a real classroom setting. This research focuses on grade VIII B students at MTs Negeri 1 Sidenreng Rappang, where the media is used in Science (IPA) lessons. The media is implemented in actual teaching sessions, and teachers observe the students' responses and engagement levels during the lessons.

The Evaluation phase involves assessing the media's effectiveness and gathering feedback from both teachers and students. This evaluation is conducted using questionnaires, which assess the validity and practicality of the media. The feedback from teachers and students helps determine the extent to which the media aids in the understanding of the material and whether it enhances the learning experience.

Data analysis in this research involves both quantitative and qualitative methods. Quantitative data is gathered through Likert scale-based questionnaires, which are distributed to the validators, teachers, and students. These questionnaires aim to measure the validity and practicality of the PowerPoint media. The data is then analyzed to calculate the percentage of validation scores, which indicate how suitable the media is for classroom use.

Finally, the research concludes by presenting the results of the validation and practicality tests, providing recommendations for potential revisions or improvements, if necessary. The overall aim is to ensure that the developed PowerPoint 3D animation media is a valid, practical, and effective tool for improving students' understanding of Science (IPA), especially on topics such as the human digestive system.

FINDINGS AND DISCUSSION

The study was conducted at MTs Negeri 1 Sidenreng Rappang, where the developed 3D animated PowerPoint media was tested in the context of Science (IPA) lessons for grade VIII B students, specifically focusing on the topic of the human digestive system. The results of the development were based on the analysis of feedback from validators, teachers, and students who participated in the study. The primary aim of this study was to evaluate the validity and practicality of the developed media, ensuring it meets the criteria for effective learning.

The findings from the validation process showed that the 3D animated PowerPoint media was highly valid for use in the classroom. The media received an overall validation score of 95.5%, indicating that it was considered very valid by both material and media validators. The material validation score was 96%, while the media validation score was 94%. These high scores suggest that the media is a reliable and effective tool for teaching the

human digestive system in a Science classroom, and it met the necessary educational standards and requirements for use in the learning process.

Furthermore, the practicality test revealed that the developed media was highly practical and easy to use in the classroom. Teachers rated the media as 96% practical, while students rated it at 86%. The overall practicality score was 98%, which falls within the "very practical" category. This result indicates that the PowerPoint 3D animation media was well-received by both teachers and students, and it was found to be user-friendly and efficient in facilitating the learning process.

In terms of teacher feedback, the responses were overwhelmingly positive, with teachers stating that the media helped enhance student engagement and comprehension. Teachers observed that the visual and interactive elements of the 3D animation were effective in making abstract scientific concepts more accessible and understandable for students. Additionally, teachers noted that the media served as a useful supplement to traditional teaching methods, as it allowed for more dynamic and engaging lessons.

The student feedback also highlighted the positive impact of the media on their learning experience. Students reported increased interest and motivation in learning about the human digestive system, as the 3D animations allowed them to visualize complex processes in a more concrete way. This aligns with research that suggests audiovisual media can enhance learning retention and understanding, particularly in subjects like science that involve abstract concepts.

The findings of this research are consistent with previous studies that emphasize the importance of using technology in education to improve learning outcomes. The use of animated 3D media is particularly effective in subjects such as Science, where visualizing processes can help students grasp difficult concepts. By integrating this technology into the learning environment, educators can create more engaging and interactive lessons that cater to various learning styles.

Despite the high ratings for both validity and practicality, some minor suggestions for improvement were provided by the teachers and students. These included recommendations to further refine the animations for even greater clarity and to incorporate more interactive elements that allow students to explore the material at their own pace. Such revisions could enhance the media's effectiveness even further and address the specific needs of diverse learners.

Overall, the results of this study indicate that the PowerPoint 3D animated media is a valuable tool for teaching Science (IPA) and can be successfully integrated into the classroom. The media's high validity and practicality scores demonstrate its potential to support effective learning and provide an engaging, interactive experience for students. With further refinements, the media can be adapted for use in other subjects and grade levels, broadening its applicability in educational settings.

CONCLUSION

This research successfully developed a PowerPoint 3D animation learning media for teaching Science (IPA) in grade VIII B at MTs Negeri 1 Sidenreng Rappang, focusing on the topic of the human digestive system. The study aimed to evaluate the validity and practicality of this media as a tool to enhance student engagement and comprehension of abstract scientific concepts. Based on the results of the validation and practicality tests, the media was found to be highly valid and practical for classroom use.

The validation results showed that the PowerPoint media received a very high rating, with an overall score of 95.5%, indicating that both the material and media aspects of the learning tool met the required standards for educational use. The media was considered highly suitable and relevant for delivering the intended content in an interactive and visually appealing manner. This confirms that the 3D

animated PowerPoint is an effective learning resource for Science lessons.

Additionally, the practicality test yielded an overall score of 98%, indicating that the media was very practical and easy to use. Teachers found the media to be an excellent supplement to traditional teaching methods, enhancing students' understanding and engagement. Students also responded positively, indicating that the 3D animations helped them visualize complex processes and increased their motivation to learn.

The positive feedback from both teachers and students emphasizes the effectiveness of the media in making abstract concepts more tangible and engaging. The media was appreciated for its interactive features, which helped students better grasp the topic of the human digestive system. The high ratings for practicality and the positive reception from students suggest that this learning media has the potential to significantly improve learning outcomes in Science education.

Based on the findings, the developed 3D animated PowerPoint media is a valuable tool for enhancing teaching and learning. Its high validity and practicality scores suggest that it can be effectively implemented in classrooms to support Science education. Furthermore, the research demonstrates the potential of using technology-based media to improve students' understanding of complex scientific concepts and foster a more engaging learning environment.

In conclusion, the 3D animated PowerPoint media is a promising educational tool that can be used to improve the quality of Science teaching. Its effectiveness in engaging students and facilitating the understanding of abstract material has been confirmed by both teachers and students. With further refinement and potential adaptation for other subjects, this media has the capacity to be a versatile and effective resource for enhancing learning in various educational settings.

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