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FlipHTML5 Assisted E-Book to Improving Elementary School Students' Motivation

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ABSTRAK

Pemanfaatan media pembelajaran berpotensi memikat dan memotivasi siswa, karena dapat meningkatkan kejelasan penyampaian pesan dan informasi, sehingga memudahkan dan mengoptimalkan pengalaman dan hasil belajar. Penelitian ini bertujuan untuk membuat E-book berbantuan FlipHTML5 yang dapat menjadi alat pendidikan yang cakap untuk meningkatkan motivasi dan prestasi akademik. Penelitian ini menggunakan metodologi penelitian dan pengembangan (R&D) dengan menggunakan model pengembangan ADDIE, yang terdiri dari lima tahap, Analisis, Desain, Pengembangan, Implementasi, dan Evaluasi. Produk menjalani validasi oleh ahli di bidang materi, media, dan bahasa terkait, dilanjutkan dengan penilaian kemanjuran media melalui metodologi pretest-posttest. Hasil validasi menunjukkan bahwa ahli materi memberikan bobot skor rata-rata sebesar 78%, termasuk dalam kategori layak. Sedangkan pakar media memberikan skor rata-rata sebesar 89% dan menempatkannya pada kategori sangat layak. Terakhir, pakar bahasa menimbang skor rata-rata sebesar 76%, sehingga menempatkannya dalam kategori layak. Penelitian ini mengkaji efektivitas pemanfaatan platform FlipHTML5 untuk memfasilitasi materi pembelajaran sistem pernapasan manusia. Penelitian ini menggunakan analisis N-Gain dan T-Test untuk melihat perbedaan antara kelompok eksperimen dan kelompok kontrol. Temuan menunjukkan bahwa pengembangan E-book meningkatkan motivasi dan hasil belajar siswa. Oleh karena itu, penelitian ini telah memberikan kontribusi yang berharga dalam menciptakan lingkungan belajar yang kondusif dan sesuai untuk tujuan.

ABSTRACT

The utilization of learning media has the potential to captivate and motivate students, as it can enhance the clarity of message and information delivery, thereby facilitating and optimizing the learning experience and outcomes. This research aims to create a FlipHTML5 assisted E-book that can be a proficient educational tool to enhance motivation and academic achievements. The present study employs research and development (R&D) methodology utilizing the ADDIE development model, comprising five stages, Analysis, Design, Development, Implementation, and Evaluation. The product undergoes validation by experts in the relevant fields of material, media, and language, followed by an assessment of media efficacy through a pretest-posttest methodology. The validation outcomes indicate that material experts weighed an average score of 78%, placing it in worthy category. Media experts, on the other hand, weighed an average score of 89%, positioning it in very worthy category. Lastly, language experts weighed an average score of 76%, placing it in worthy category. The present study examines the efficacy of utilizing the FlipHTML5 platform to facilitate the human respiratory system learning material. The study employed N-Gain analysis and a T-Test to discern disparities between the experimental and control groups. The findings indicated that the E-book's development enhanced students' motivation and learning outcomes. Consequently, this research has contributed valuably to establishing a conducive learning environment well-suited for educational purposes.

1. INTRODUCTION

Elementary education is a formal educational stage that endeavors to foster the acquisition and enhancement of knowledge and skills within individuals. Natural science, commonly known as science, is a crucial area of knowledge and skill development that must be cultivated in elementary education (Fitria et al., 2021; Kafah et al., 2020). The impact of the rapid advancement of information technology in the contemporary era of globalization on education is an inescapable reality (Sun & Chen, 2016; Tanjung, 2020). The natural sciences and technologies of this world have seen a great deal of change, which may be observed from the way in which the environment affects our daily life (Lampropoulos et al., 2019; Zulfadewina et al., 2020). Hence, it is imperative to be able to adjust to the changes that transpire to equip students with the necessary skills to confront the circumstances in their surroundings through the study of Natural Sciences. The learning process is facilitated through interactive activities between teachers and learners, accompanied by reciprocal communication in educational settings, aiming to achieve learning

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objectives. The learning process aims to facilitate acquiring knowledge and comprehending concepts and enhance advanced cognitive abilities. Students in elementary school are in a stage of concrete development, which necessitates a clear and tangible understanding of each concept. This intention can be achieved by providing adequate media facilities to ensure effective implementation (Nufus et al., 2020)(Haling et al., 2022)(Sukmawati et al., 2022). Transferring knowledge is an integral part of the learning process, which seeks to disseminate educational content. Various tools are employed to facilitate information dissemination, commonly referred to as learning media. Incorporating media into the teaching strategy requests the instructor's consideration as a facilitator in all educational activities (Maulidiyyah et al., 2021; Nurchotimah et al., 2022).

The effectiveness of learning relies upon the teacher's ability to incorporate educational elements into the teaching and learning process through engaging, stimulating, and inventive instructional media. The utilization of learning media has the potential to captivate and motivate students, as it can enhance the clarity of message and information delivery, thereby facilitating and optimizing the learning experience and outcomes (Nurpratiwiningsih et al., 2018; Puspitarini & Hanif, 2019). Incorporating learning media is imperative to enhance, foster motivation, and cultivate new enthusiasm within the educational experience. The current state of teaching practices suggests a lack of implementation of innovative learning media, resulting in a predominantly teacher-centered approach (Teacher centered learning) to learning in schools (Imansari et al., 2019; Zulherman et al., 2021). One of the primary concerns students express is a sense of boredom and monotony with the classroom experience, as their involvement is largely restricted to the passive reception of instructional material from the teacher. The impact of saturation on the ability to comprehend natural sciences, specifically in the respiratory system and human senses topic, has been demonstrated through study conducted by researchers. Furthermore, it is worth noting that there exist students who do not prioritize learning, consequently resulting in reduced levels of activity and lower student learning outcomes. To effectively facilitate learning, teachers must be able to select and assess instructional media that are both pragmatic and adaptable and align with the presented or instructed learning material. The upcoming election is expected to enhance students' motivation towards the learning process. Utilizing scientific and technological advancements (IPTEK) through interactive media, such as e-books, can facilitate students' learning outside the traditional classroom setting. Interactive media has the potential to enhance student motivation toward education, leading to a self-driven desire to improve their academic performance and, ultimately, positively impacting their learning outcomes (Lieung et al., 2021; S. R. Putri et al., 2022). Electronic books (e-books) serve as an effective medium for science education, featuring interactive content that has the potential to captivate students and foster motivation toward learning. An e-book is a digital rendition of a textbook capable of visually representing abstract concepts and incorporating animation to facilitate comprehension among students (Anwar & Wibawa, 2019; Rahmaniyah et al., 2023; Ramadhani & Khusniati, 2022). Electronic books have the potential to capture students' interest and encourage their active engagement in the learning process, ultimately leading to improved academic outcomes.

The development of this e-book was facilitated through the utilization of FlipHTML5 and applied the ADDIE model for instructional design. The e-book exhibits creativity and innovation in its design and implementation. FlipHTML5 is a flipbook developer software that provides its users with amazing features to create digital flipbooks (Nurhayati et al., 2022; A. I. Putri, 2022). The selection of FlipHTML5 is predicated upon the user-friendly nature of the E-Book in accessing the final product generated by indicated software. The resultant electronic book is highly mobile and can be conveniently accessed from any location and at any time through a computer, laptop, or smartphone. FlipHTML5 offers several benefits, including converting file formats like PDF, Word documents, PPT, and images into a book format. This conversion process is efficient and can produce realistic pages in a matter of minutes. Additionally, users are not required to have coding skills when inserting pictures or videos. Furthermore, the platform features a robust animation editor that allows users to create lively and appealing flipbooks (Nurhayati et al., 2022; Silaban et al., 2022). The author created a FlipHTML5 assisted e-book utilizing to provide educational resources on the respiratory system and human senses for elementary school students in the fifth grade. This research aims to create a FlipHTML5 assisted E-book that can be a proficient educational tool to enhance motivation and academic achievements. Implementing FlipHTML5 assisted E-book for learning medium will promote student engagement, motivation, and meaningful learning outcomes.

2. METHOD

The present investigation employs a Research and Development (R&D) methodology. This research and development aim to generate products, evaluate their efficacy, and assess the feedback of product consumers (Ridho et al., 2021). The ADDIE development model, comprising five distinct stages, is

utilized in this study. These stages include Analysis, Design, Development, Implementation, and Evaluation. The ADDIE development model is a methodical approach that follows a structured sequence of activities aimed at addressing learning challenges related to educational materials designed to meet learners' unique needs and attributes (Widyastuti, 2019). The researcher employed a multiple-choice reading test as the primary instrument for data collection. The assessment instrument, referred to as Multiple Choice Questions, comprises a set of ten questions, each presenting the respondent with four alternatives labeled as a, b, c, and d. Multiple choice tests are utilized to assess a student's level of proficiency in a given subject matter (Adinda et al., 2022). The assessment comprises a pretest (1), an initial evaluation to gauge students' proficiency in the lesson material before administering instructional intervention, encompassing the experimental and control groups. A posttest (2) is an assessment administered to evaluate students' proficiency level in a particular subject matter after receiving instruction, encompassing both the experimental and control groups.

Quantitative analysis techniques were employed for data analysis. The study collected quantitative data during the validation stage and from material experts, media experts, language experts, and small- and large-scale trials. The objective is to assess the efficacy and score of the final product through user feedback (Mardin et al., 2022). The data obtained for validation was analyzed using component percentages derived from the Likert Scale, as presented in Table 1.

Tabel 1. Feasibility Scale For E-Book Development Using Fliphtml 5

Percentage score (%)	Interpretation
81% - 100%	Very Worthy
61% - 80%	Worthy
41% - 60%	Decent enough
21% - 40%	Not worth it
0% - 20%	Very Not worth it

Subsequently, the data obtained from the experimental and control groups were subjected to analysis through the utilization of pretest and posttest questions. The researcher employed the N-Gain formula for this purpose. Subsequently, a T-test was conducted to ascertain the statistical significance of the findings obtained from this investigation (Doyan et al., 2020).

3. RESULT AND DISCUSSION

Result

The outcome of the research and development efforts yielded an FlipHTML5 assisted e-book learning media. Materials, media, and language experts validated the product's contents. The objective of validation is to appraise and analyze products that have been developed to identify their merits and demerits, employing feedback, critiques, and recommendations from proficient professionals.The outcomes of validation conducted by experts in material, media, and language expertise will hold significant value in the context of the results and discussion. The ADDIE development model encompasses a series of stages intended to assess the feasibility of media products during their development and implementation. According to the data analysis findings conducted by material experts, the mean validation percentage was determined to be 78%, which falls within the "Worthy" category. The validation outcomes ascertained by media experts indicate an 89% overall validation, placing the class under the "Very Worthy" classification. Similarly, concerning the results of the language expert, the mean validation percentage was 76%, placing it within the "Worthy" category. According to the evaluation conducted by materials, media, and language experts, the findings indicate that the product under development, specifically the E-book utilizing FlipHTML5, is classified as satisfactory and may proceed to the subsequent phase of experimentation.

The study's final phase involves the execution and assessment of the program, which will be conducted through a series of activity steps at the program's conclusion. Learning media that has undergone development and validation by materials, media, and language experts will be utilized for conducting feasibility assessments as teaching media. This will involve assessing student learning outcomes to ascertain the efficacy of FlipHTML5-assisted E-book media. An increase in student learning outcomes purportedly indicates the effectiveness of the FlipHTML5 assisted E-book. Following the validation and revision of the media, a Pretest-Posttest design utilizing a single group consisting of 10 multiple-choice questions is administered to students. The findings of the examination are presented in the subsequent Table 2.

Tabel 2. The Average N-Gain Score for the Experimental and the Control Class

Statistics	Experiment Class N-Gain Score	Statistics	Control Class N-Gain score
Average	62.04	Average	36.42
Minimum	25.00	Minimum	14.29
Maximum	100.00	Maximum	66.67

According to Table 2 N-Gain test score calculation, the Experimental group's mean score following exposure to the E-book intervention is 62.04 or 62.04%, placing it within the "Somewhat Effective" classification. The minimum and maximum N-Gain scores were 25% and 100%, respectively. In contrast, the control group, which did not receive an E-book, exhibited an average N-Gain Score of 36.42 or 36.42% during the same period. The percentage, as mentioned earlier, has been classified under the "Ineffective" category, wherein the minimum N-Gain score is 14.29%, and the maximum score is 66.67%. Subsequently, a statistical analysis using an Independent T-Test was conducted to evaluate the N-Gain Score. The outcomes are observable in the subsequent Table 3.

Tabel 3. Independent T-Test for N-Gain Scores

	Statistics	Levene's Test for Equality of Variances				
		F	Sig.	t	df	Sig. (2-tailed)
NGain_Persen	Equal variances assumed	3.072	0.085	4.972	59	0.000
	Equal variances not assumed			4.999	54.096	0.000

The output of Table 3 the independent sample test indicates the Sig. Levene's Test value for Equality of Variances is 0.085, which exceeds the 0.05 significance level. This suggests that the variance of the N-Gain data (%) for both the experimental and control classes is homogeneous. According to Table 3 for the "Independent Samples Test," it can be inferred from the "Equal variances assumed" section that the Sig. (2-tailed) value is 0, less than < 0.05. It can be deduced that a notable disparity in efficacy exists between classes that utilize E-book media and those that do not employ such media in enhancing motivation and improving learning outcomes in Science courses concerning the Respiratory System and Human Senses for students in the fifth grade.

Discussion

The previously mentioned research findings indicate that students perceive the teacher's explanation as a significant factor contributing to their inadequate comprehension of scientific concepts. During the education process, the instructor continues to utilize the traditional lecture approach and the range of media employed is limited, encompassing solely the blackboard and PowerPoint. Teachers have yet to incorporate electronic books into their instructional methods (Belo et al., 2016; Ry-Kottoh et al., 2022). Therefore, researchers must think of media that can facilitate students' comprehension of educational content presented through a FlipHTML5 assisted E-book.

Subsequently, the produced e-books underwent a validation process by material, media, and language experts. This assessment aimed to the findings from the validation conducted by the material expert revealed that the utilization of integrated FlipHTML5 in developing an E-book yielded a score of 78% in worthy classification. The media experts' validation outcomes yielded an 89% score in very worthy category. Similarly, the evaluation outcomes conducted by linguistic specialists yielded a 76% score in worthy classification. The validation analysis demonstrates that the input gathered from material, media, and language experts is reliable. Based on the findings, it can be inferred that E-book learning media assisted by FlipHTML5 is suitable for fifth-grade elementary school students, particularly in teaching the respiratory system and human senses. The present study resembles the investigation carried out by previous study which suggests that E-books are highly useful to enhancing students' comprehension of the learning material (Tania & Fadiawati, 2015). Furthermore, E-books are deemed to facilitate students' learning experience beyond the confines of the classroom setting. Other study have similarly asserted that e-books are innovative learning media products that utilize software to present teaching materials attractively, incorporating various features such as text, video, images, audio, and charts (Afnita et al., 2021). According to research, e-books are highly effective media for enhancing

students' cognitive abilities. This is attributed to the fact that e-books are designed to be engaging and captivating, thereby promoting active learning and reducing boredom E-book Referring to the pre-and post-tests and the N-Gain calculations, the Experimental class scored 62.04 or 62.04%, placing it in the category of being moderately effective. In contrast, the control group (which did not receive E-book media) obtained 14.29 or 14.29%, placing them in the ineffective group. Then, a T-test was conducted, which indicated that the sig. (2-tailed) is less than 0.05. Therefore, it can be concluded that there is a significant (real) difference in the effectiveness of E-book media on increasing student motivation and learning outcomes between classes that are given E-book media and classes that are not. Students in the Experiment class who received the E-book media possessed greater knowledge than those who did not receive the E-book media. It is anticipated that the use of e-books will increase students' knowledge and mastery of the class material.

Students in both the experimental and control groups performed poorly on the pre-test, measuring their knowledge ability. After receiving the treatment (using the e-book), the experiment class students' average knowledge posttest scores increased more than those of the control class students who did not use the e-book. The utilization of e-book media in the experimental group significantly improved the students' knowledge skills compared to the control group, which relied solely on printed books for learning. In contrast, the utilization of e-book media is observed in the experimental group during the learning process. Innovation is required to enhance the appeal of e-books to students. Interactive media facilitates enhanced comprehension and retention of presented material among students. According to previous study e-books diverge from traditional printed books in their ability to foster an efficacious and enjoyable learning environment (Rahim et al., 2020). As a learning medium, e-books can potentially enhance students' scientific knowledge and skills. As a learning medium, e-books can potentially improve students' scientific knowledge and skills. In light of prior research conducted E-book media as an interactive learning tool has enhanced student motivation and engagement in the learning process (Perdana et al., 2021).

The implication of this research is that educators and curriculum developers can consider the use of interactive e-book technology as a tool to increase students' interest and enthusiasm in learning. In addition, the results of this study can encourage further development in creating more interesting and interactive learning materials. This can have a positive impact on the way students interact with learning materials and increase learning effectiveness. Limited access to technology devices and the internet at home or at school may prevent some students from easily accessing interactive e-books, which can lead to gaps in the learning experience. This research may only look at the short-term impact of using interactive e-books. Further research is needed to understand the long-term impact on student learning outcomes and motivation.

4. CONCLUSION

The study's findings and previous discussion suggest that implementing FlipHTML5 as a tool for E-book creation is conducive to effective learning outcomes. Endorses establishing a conducive learning environment and is deemed appropriate for integration into the learning process. Further development of this research is required through a follow-up study that utilizes the FlipHTML5-assisted E-book as a research tool. Utilizing the FlipHTML5-assisted E-book is anticipated to yield improved learning outcomes.

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