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Innovation in Digital based History Learning through Flipbooks for Elementary School Students in Lembang District

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Abstract

This study evaluates the effectiveness of using flipbooks as digital-based history teaching materials in elementary schools in the Lembang area. Using a descriptive qualitative approach, this study found that flipbooks can significantly improve students' motivation, engagement, and understanding. The test results showed an increase in students' average scores and critical thinking skills. Despite challenges such as limited technological devices and teacher readiness, proper support allows flipbooks to function effectively in learning. Teachers play an important role as facilitators and innovators in the integration of this technology. These findings indicate the great potential of flipbooks to improve the quality of education, as well as the importance of widespread adoption in other school curricula.

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INTRODUCTION

In an era of rapid technological development, the world of education faces the challenge of remaining relevant to the needs of today's digital generation (SARTINI et al., 2024). One of the major obstacles faced by educational institutions, especially at the elementary school level, is the low interest of students in history subjects. This is due to the conventional learning approach, which is often considered monotonous by students, so innovation is needed that can create learning methods that are more relevant, interesting, and motivating for students (Saputri et al., 2023).

Digital flipbooks are present as an innovation that is able to answer this challenge with a more interactive, modern learning approach that is in accordance with the needs of the digital generation. As a technology-based learning medium, flipbooks offer an attractive, intuitive, and easy-to-use interface, making it easier for students to understand the material. The advantages of flipbooks lie in multimedia features such as animation, video, and audio, which provide a fun learning experience while stimulating students' interest to be more actively involved in the learning process (Nisa & Purwati, 2024).

Flipbooks also offer incredible flexibility that supports modern learning, making them a relevant tool for students in the digital age. With easy access anytime and anywhere, flipbooks give students full control to manage their own time and learning style. In addition, this approach allows students with various learning styles, whether visual, audio, or kinesthetic, to be actively involved and get the most out of the holistically designed features (Fitri & Suciptaningsih, 2024).

Previous studies have shown that multimedia-based media, such as flipbooks, have a significant positive impact on student motivation and learning outcomes. Melati et al., (2023) revealed that interactive visual elements can improve students' understanding of complex concepts, while Purnamadewi & Wiyasa, (2022) found that the use of this technology can reduce boredom in learning. In the context of history learning, Li et al., (2023) emphasized the importance of a digital approach to help students bridge theory with reality, so that the material is easier to understand and relevant.

For teachers, flipbooks are a medium that allows for creative and varied presentation of materials, which ultimately increases the effectiveness of the learning process. The interactive features in flipbooks give teachers the freedom to adapt the material to the needs of students, making it more interesting and in accordance with their learning styles. However, the successful implementation of this technology requires support from various parties, including the provision of adequate infrastructure, training for teachers, and access to technological devices for students (Nafiah & Wuryandani, 2024).

The learning method that utilizes flipbooks not only answers the needs of modern learning but also provides concrete solutions to overcome digital distractions that students often face every day. By presenting a more interesting and interactive approach, flipbooks have the potential to significantly increase student motivation and learning outcomes. This implementation model can be applied in other elementary schools, especially in Lembang District, to make digital technology an integral part of the curriculum (Kennedy et al., 2022).

However, the successful implementation of digital technology such as flipbooks is not without challenges, especially related to the gap in access to technological devices and internet infrastructure. In some areas, these limitations are the main obstacles for students in accessing materials optimally, so strategic solutions are needed to overcome them. This study aims to explore how flipbooks can be implemented effectively, even in conditions with technological limitations (Hariro et al., 2024).

Flipbooks have great potential in increasing student engagement in history learning, which is one of the key factors for success in the teaching and learning process. Students who use flipbooks are not only expected to be able to understand the material better but also to be more motivated to learn independently. In the long run, this approach can help create more productive and effective learning habits (Crompton et al., 2021).

This study aims to evaluate the effectiveness of using flipbooks as innovative, digital-based learning media in history learning in elementary schools in the Lembang District. The main focus of this study is to identify the impact of flipbooks on students' motivation and learning outcomes, as well as to evaluate the factors that support or hinder the successful implementation of this technology in the learning process. With the expected findings, this study

can provide an important contribution to the development of educational literature related to the use of technology in history learning.

METHOD

This study uses a descriptive qualitative approach to explore the effectiveness of flipbooks as a digital-based history learning innovation (Dewi & Muhibbin, 2024). The focus of this study is to deeply understand the experiences and perceptions of students and teachers towards the use of flipbooks as an innovative learning medium that integrates multimedia elements, such as video, animation, and audio, in history learning in elementary schools in Lembang District.

Table 1. Respondent Data

Respondent	Amount	Information
Elementary School Students	30	Using flipbook
Teacher	1	Teaching using flipbooks

Data were collected through in-depth interviews, participant observation, and document analysis. Interviews were conducted to explore students' and teachers' perceptions regarding the advantages and constraints of using flipbooks as a learning innovation. Participatory observation was conducted during the learning process to monitor how students interact with flipbooks and to evaluate the extent to which flipbooks are able to increase student engagement in class. Document analysis included a review of teaching materials, innovative features provided by flipbooks, and student learning outcomes.

The collected data were analyzed using thematic analysis techniques, where the main themes emerging from the data were analyzed to provide a comprehensive picture of the effectiveness, innovation, and challenges of using flipbooks as digital teaching materials. In addition, this study evaluated the extent to which flipbooks meet the criteria as learning media that are easy to use by students and teachers and how their interactive features contribute to increasing student motivation and understanding.

RESULTS AND DISCUSSION

Results

1. Contribution of Flipbooks to Increasing Student Motivation and Engagement

The use of flipbooks as a digital-based history learning innovation has had a significant impact on increasing the motivation and involvement of elementary school students in Lembang District. The results of observations and in-depth interviews showed that students were more enthusiastic and motivated to learn history when the material was presented through flipbooks compared to conventional learning methods. Flipbooks offer interesting interactive elements, such as animation, video, and audio, which can stimulate students' curiosity and make it easier for them to understand complex historical material (Tanaya, 2024).

Table 2. Data on Increasing Student Motivation and Engagement

Aspect	Before Using Flipbook	After Using Flipbook
Motivation to learn	60%	85%
Student Engagement	55%	80%
Active Participation	50%	75%
Use of Interactive Elements	There isn't any	90%
Ease of Access to Materials	Limited	Very good

Flipbooks facilitate increased motivation through easy-to-use interfaces and flexibility of access. Students can access flipbooks anytime and anywhere, allowing them to learn independently according to their individual needs and learning styles. This flexibility motivates students to be more responsible for their own learning process. In addition, interactive features such as quizzes, videos, and animations provide a non-monotonous learning experience, making it more fun and interesting compared to using conventional textbooks (Purwaningrum et al., 2024). Interactive elements (quizzes, videos, animations) are widely used by students and are one of the main drivers of increased motivation. In addition, ease of access allows students to learn flexibly and independently, which also increases their engagement.

One student said that learning with flipbooks felt like watching an interesting documentary, not just reading boring text. This shows that the use of visual and multimedia elements in flipbooks can create a more lively and dynamic learning experience. The ease of navigation on flipbooks is also one of the factors that encourages students to be more involved in learning, especially in understanding complex historical concepts.

Observations during learning showed that students were more focused on the material presented through flipbooks. They asked questions more often, participated in class discussions, and were active in group assignments. The interactive elements in flipbooks allow students to learn history through a more personal and exploratory approach. For example, students with a visual learning style find the presence of images and animations very helpful, while students who tend to learn through audio can take advantage of the sound features available in flipbooks.

The use of flipbooks also creates a more collaborative learning environment. Students often work in groups to understand the material, discuss, and share knowledge with each other. This not only increases student engagement in learning but also strengthens their social and collaboration skills. Some students even feel challenged to create their own flipbooks as creative projects, which shows that flipbooks can inspire students to learn more deeply and develop their creativity.

In addition, flipbooks help students develop better learning habits outside the classroom. Interview results show that students open flipbooks more often at home to review lesson materials or prepare for exams. The ease of access and interactive features of flipbooks motivate students to study independently, a habit that rarely occurs with conventional textbooks.

Although some students initially had difficulty adapting to this new technology, with the support and guidance of teachers, they were eventually able to master the use of flipbooks. Teachers also play an important role in ensuring that students can utilize the features of flipbooks optimally. Thus, the success of flipbook implementation depends not only on the technology but also on the role of teachers as learning facilitators.

Overall, flipbooks contribute significantly to increasing student motivation and engagement by presenting interactive elements, flexibility of access, and an easy-to-use interface. These findings suggest that flipbooks can be an effective learning medium to improve the quality of education, especially in history learning in elementary schools.

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2. Improving Student Understanding and Learning Outcomes

Improving students' understanding and learning outcomes is one of the main objectives of implementing flipbooks as digital-based learning media in elementary schools in Lembang District. Flipbooks, as a learning innovation, not only aim to convey factual historical information but also help students understand the context, cause-and-effect relationships, and relevance of the historical events being studied. Flipbooks' ability to present information in an interesting and interactive way provides a significant new approach to improving learning effectiveness.

The results showed that the use of flipbooks had a significant impact on students' average scores. Data collected before and after the implementation of flipbooks showed an increase in average scores from 50 to 80, as shown in Table 2. These findings indicate that flipbooks are able to create a more effective learning experience compared to conventional methods. The structured presentation of material in flipbooks, which is equipped with visual elements such as images, animations, and videos, provides students with a deeper understanding and makes it easier for them to remember the material being studied (Lailiyah et al., 2024).

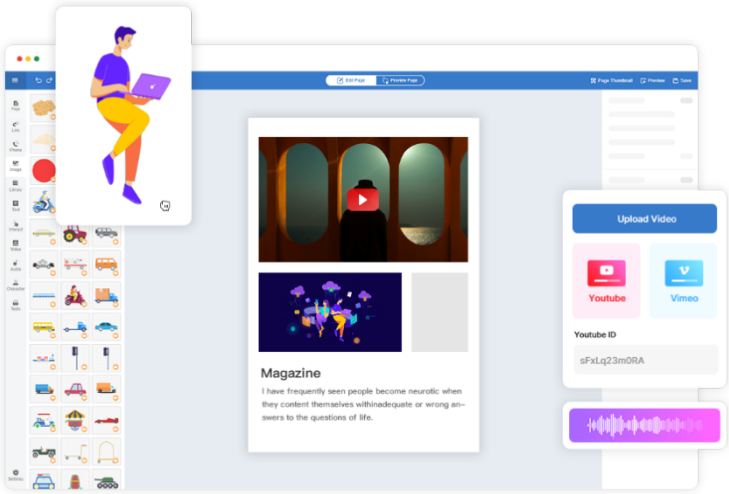

Figure 2. Visualization of the Concept of History in a Flipbook

Table 3. Increase in Students' Average Scores Before and After Using Flipbooks

Aspect	Before Using Flipbook	After Using Flipbook
Average student grades	50	80

The presentation of material in flipbooks also helps students understand historical concepts that were previously considered difficult. Interactive visual elements provide concrete visualizations, which help students understand historical events in more depth. With animation, students can see a dynamic picture of an event, which not only provides information but also creates a meaningful learning experience. In addition, multimedia elements such as videos help students connect theory with historical reality, thereby strengthening their understanding.

Ease of access is also a key factor that makes flipbooks effective in improving learning outcomes. Students can access materials anytime and anywhere, allowing them to learn independently according to their individual needs and learning styles. This feature is very

helpful for students who need more time to understand the material. They can repeat certain parts of the flipbook until they really understand it. This flexibility, in addition to improving learning outcomes, also builds students' sense of responsibility for their own learning process.

However, one of the challenges faced is limited access to technological devices and internet connections. Some students in this area do not have personal devices such as tablets or laptops, so they have to rely on facilities provided by the school. In addition, unstable internet connections often become a barrier to fully accessing flipbooks. Therefore, a practical solution proposed is to pre-load flipbooks onto students' devices so that the materials can be accessed offline. With this solution, students can still learn with flipbooks even though the internet connection is limited.

Teachers also play an important role in supporting the successful use of flipbooks. They feel helped by the visual and multimedia features that make it easier to deliver complex material. Teachers can use flipbook elements to create more creative and interesting learning. In addition, flipbooks allow teachers to organize materials that suit students' needs, including providing a variety of learning approaches for various learning styles. This makes learning more effective and increases student engagement in class.

Training and workshops are important elements to ensure that teachers can use flipbook features optimally. Some teachers stated that they needed more time to prepare materials in flipbook form compared to conventional methods. However, they also admitted that the results obtained were much more satisfying, both in terms of student understanding and in terms of the efficiency of the learning process. With adequate training, teachers can maximize the potential of flipbooks as an innovative learning medium.

Analysis of student learning outcome documents shows that flipbooks not only improve test scores but also develop critical and analytical thinking skills. Students become better able to identify cause-and-effect relationships in history, evaluate the impact of an event, and connect material to a broader context. These abilities reflect the importance of flipbooks in encouraging the development of higher-order thinking skills that are essential in history learning.

Despite the challenges, the results of the study show that flipbooks make a significant contribution to improving student learning outcomes. By presenting interactive and engaging materials, flipbooks create effective learning experiences, both inside and outside the classroom. Solutions such as pre-loading materials onto students' devices and providing shared devices at school can address technology access constraints. Support from the school in providing adequate facilities is also very important for the success of flipbook implementation.

Overall, the use of flipbooks as an innovative learning medium has proven effective in improving the quality of history learning in elementary schools in the Lembang District. By addressing access constraints and providing adequate training for teachers, flipbooks can be adopted more widely as a digital-based learning medium that supports the development of modern century skills.

3. Obstacles and Challenges to Flipbook Implementation

Although the use of flip books as digital teaching materials has many advantages, its implementation is not free from various obstacles and challenges. In the context of education in elementary schools in the Lembang area, some of the main obstacles faced are related to technological infrastructure, teacher and student readiness, and support from school institutions.

These obstacles need to be overcome to ensure that flip books can be used effectively and provide maximum benefits in history learning.

One of the main challenges is limited access to technological devices and internet connectivity. Many students do not have personal electronic devices such as tablets or laptops, so they have to rely on facilities provided by the school. However, the number of devices available is often insufficient for all students to use simultaneously. In addition, the problem of unstable internet connections also often hinders students' access to flip books, especially when they are learning from home. This shows that there is an urgent need to improve technological infrastructure in schools, including the provision of adequate devices and stable internet access.

In addition, teacher readiness in adopting and integrating new technologies is also a significant challenge. Many teachers still feel less confident in using digital technology for teaching, especially those who are not familiar with the use of electronic devices in learning (Wahyudi & Jatun, 2024). In interviews, several teachers expressed that they needed additional training to be able to make maximum use of flipbooks in the learning process. Support from the school in the form of training and workshops on the use of technology in teaching is needed to improve teacher competence in implementing flipbooks.

From the students' perspective, adapting to new technology is also a challenge. Not all students are accustomed to using electronic devices for learning, and some may need more time to adjust to the new learning method. Observations during the learning process showed that some students initially found it difficult to use flipbooks, especially in navigation and use of the interactive features available. However, with proper guidance and support from teachers, most students were eventually able to master the use of flipbooks and felt their benefits in learning. This shows the importance of the role of teachers in providing guidance and support to students during the adaptation process.

In addition to technical constraints, another factor that also influences the success of flipbook implementation is support from school institutions. This support can be in the form of providing technology facilities, training for teachers, and policies that support the use of technology in learning. This study found that schools that have strong support from management tend to be more successful in implementing flipbooks compared to schools that receive less support. Therefore, it is important for schools to create a conducive environment for the use of technology in learning, including by providing the necessary support for teachers and students.

Another challenge is the issue of licensing and copyright of digital content. Flipbooks often require multimedia content such as images, videos, and audio that must comply with copyright laws. In some cases, schools may face obstacles in obtaining licenses to use certain content. To overcome this, it is important for schools to work with content providers or utilize legally available open resources. Support from third parties, such as the government or educational organizations, can also be very helpful in providing digital content that is in accordance with learning needs.

Despite these obstacles and challenges, this study shows that the use of flipbooks has great potential to improve the quality of history learning in elementary schools in the Lembang area. By overcoming the existing obstacles, flipbooks can be an effective tool in creating a more interactive, interesting, and meaningful learning experience for students. It is hoped that the results of this study can be valuable input for other schools that want to adopt digital technology

in their curriculum, as well as for policymakers in developing strategies to improve technology infrastructure in schools.

In order to ensure the success of the implementation of flipbooks, good cooperation is needed between all related parties, including teachers, students, schools, and the government. With the right support, these barriers can be overcome, and flipbooks can make a significant contribution to improving student motivation, engagement, and learning outcomes. This shows that while there are many challenges in implementing new technologies in education, the benefits are far greater and worth pursuing.

4. Student Adaptation and Response to the Use of Flipbooks

Student adaptation and response to the use of flipbooks as a digital-based history learning innovation is an important aspect in the implementation of this technology in elementary schools in the Lembang District. In the early stages of implementation, some students faced challenges in navigating and understanding the interactive features contained in flipbooks. This difficulty was mainly experienced by students who were not used to using electronic devices for learning purposes. Observations show that the adaptation process takes time, especially for students who are used to conventional learning methods that do not require a high level of interaction.

However, with intensive guidance from teachers, students began to show increased ability in using flipbooks. Teachers play an important role as facilitators by providing tutorials, demonstrations, and short training sessions to help students understand how flipbooks work (Gopalan et al., 2022). An interactive and collaborative multimedia-based pedagogical approach also supports this adaptation process. In the context of multimedia learning theory (Siregar, 2024), flipbooks help reduce students' cognitive load by presenting material through various channels, such as visuals, audio, and text, so that information is more easily processed by the brain.

Students' responses to the use of flipbooks varied depending on their technological background. Students who had regular access to electronic devices at home showed faster adaptation and felt more confident in using flipbooks for learning. In contrast, students who were less familiar with technology required more time to adjust. However, the dual-channel cognitive theory (Ginting et al., 2022) asserts that the use of visual and verbal elements in flipbooks can facilitate the learning of students from various technological backgrounds, reduce mental stress, and help them understand the material more efficiently.

This study also found that flipbooks were able to create a more engaging and enjoyable learning environment. Many students felt that features such as animation, video, and quizzes in flipbooks provided a more dynamic learning experience compared to conventional textbooks. Students stated that they found it easier to understand complex historical concepts when the material was presented visually. This is in line with the findings of (Khairani et al., 2024), which stated that the use of multimedia elements in learning can increase information retention while deepening students' understanding.

In interviews, several students expressed that flipbooks provided a more personal and less boring learning experience. Students felt that the visualizations in flipbooks made it easier for them to understand the cause-and-effect relationships in historical events, making the material feel more relevant. This multimedia approach supports the theory of reducing cognitive load by

dividing information into a more digestible format, thereby reducing overloading on students' working memory.

Observations during learning showed that students were more active in asking questions and discussing when using flipbooks. They more often shared ideas and completed group assignments related to the flipbook material. This collaboration not only improved students' understanding of the material but also strengthened their social skills. Students actively used interactive elements in flipbooks, such as videos and animations, to support their discussions. This reflects the positive impact of multimedia technology in encouraging active and collaborative learning.

The increase in students' independent learning initiatives was also seen from interviews and observations. Many students admitted that they opened flipbooks more often outside of class hours to review material or prepare for exams. They felt that the varied and interesting presentation of material in flipbooks made it easier for them to understand the lessons without feeling burdened. Cognitive theory explains that when students enjoy the learning process, the cognitive load is reduced, allowing them to absorb information better.

However, the implementation of this technology is not without challenges. One of the main obstacles is the limited technological devices in students' homes. Some students do not have personal devices, so they have to rely on facilities provided by the school. In addition, internet connectivity issues often hinder students' access to flipbooks, especially for those who are studying from home. A practical solution proposed is to pre-load flipbooks onto students' devices to enable offline use. This step will ensure wider access, even for students with limited internet connections.

Despite the challenges faced, this study found that students who were able to overcome these initial obstacles showed significant improvements in their engagement and understanding of history materials. They became more confident in using technology and more motivated to learn. With the support of multimedia learning theory, it can be concluded that the use of flipbooks that present materials through various formats can optimize the learning process, even for students who initially had difficulty adapting.

Overall, students' responses to flipbooks as digital teaching materials were very positive. Although there are challenges that need to be overcome, these findings suggest that flipbooks, with their multimedia features and easy-to-use interfaces, have great potential to increase students' motivation, engagement, and understanding in learning history. This is in line with multimedia learning theory that emphasizes the importance of using visual and verbal elements to reduce students' cognitive load. With teacher support and adequate facilities, flipbooks can be an effective tool to improve the quality of education in elementary schools.

5. The Role of Teachers in Flipbook Implementation

The role of teachers is crucial in the implementation of flipbooks as digital teaching materials in history learning in elementary schools in Lembang. Teachers not only act as facilitators in the learning process but also as motivators and innovators who are able to adapt this new technology into their curriculum. The success of using flipbooks depends heavily on the teacher's ability to effectively integrate this technology into the learning process.

One important aspect of the teacher's role is to provide the guidance and support needed by students during the adaptation period to flipbooks (Jendra & Wahju Wardhana, 2024). In the

early stages of implementation, many students have difficulty navigating and understanding the features of flipbooks. Teachers play an important role in providing tutorials, demonstrations, and short training sessions to help students overcome these difficulties. Teachers must have a deep understanding of how flipbooks work and be able to teach students how to get the most out of them.

In addition, teachers are also responsible for designing and presenting learning materials that are in accordance with the characteristics of flipbooks. They must be creative in compiling interactive and interesting content so that they can increase students' interest and motivation in learning. The use of visualizations, animations, and multimedia in flipbooks requires special skills from teachers to ensure that the material presented is not only informative but also interesting for students.

The role of teachers in integrating flipbooks into the curriculum also involves adjusting teaching methods. Teachers must be able to combine traditional learning approaches with digital technology to create a holistic learning experience. This includes adapting more interactive and participatory teaching strategies, such as group discussions, presentations, and collaborative projects involving the use of flipbooks. This approach not only increases student engagement but also helps them develop social and collaborative skills.

Teachers must also have adequate technical skills to overcome problems that may arise during the use of flipbooks. They must be able to identify and solve technical problems quickly so that the learning process is not disrupted. For this, adequate training and support from the school are needed in the form of workshops and regular training sessions on the use of technology in teaching. This support is very important to improve teacher competence in implementing flipbooks effectively.

In interviews, several teachers expressed that they felt challenges in adopting this new technology, especially in terms of preparing teaching materials. Creating flipbook materials requires more time and effort compared to conventional methods. Teachers must design interactive and interesting content, which requires creativity and technical skills. However, they also stated that the results obtained were much more satisfying, as students showed significant increases in motivation and understanding.

Teachers also have an important role in motivating and inspiring students to use flipbooks in learning. They must be able to provide positive encouragement and guidance so that students feel confident and motivated to use this technology. Teachers who have a positive attitude towards the use of technology will be able to inspire students to follow in their footsteps and make optimal use of flipbooks. Therefore, it is important for teachers to continue to update their knowledge and skills in using digital technology.

The use of flipbooks also encourages teachers to develop more innovative pedagogical approaches. They must be able to create a conducive learning environment and support student exploration and experimentation. Innovative teachers will be able to utilize flipbook features to create a more dynamic and engaging learning experience. This not only increases student engagement but also helps them develop critical and analytical thinking skills.

Observations during the learning process show that teachers who are proactive in using flipbooks are able to create a more lively and interactive classroom atmosphere. They are able to direct class discussions and activities in a way that encourages active student participation.

Teachers can also use flipbooks to provide constructive feedback and support students' academic development. Thus, the role of teachers in implementing flipbooks is very important to create an effective and meaningful learning experience.

In addition, teachers must also be able to manage and integrate various learning resources available in flip books. They must be able to select and organize content that is relevant and in accordance with learning objectives. Effective teachers will be able to utilize various resources available in flip books to enrich teaching materials and provide comprehensive learning experiences for students. This requires good analytical and curatorial skills from teachers.

Overall, the role of teachers in implementing flip books as digital teaching materials is very complex and requires various skills and adequate support. The success of using flip books depends heavily on the teacher's ability to adapt and integrate this technology into the learning process in an effective and engaging way. With the right support from the school, teachers can utilize flip books to create more interactive, engaging, and meaningful learning experiences for students. The results of this study indicate that teachers who are proactive and innovative in using flip books are able to increase student motivation, engagement, and understanding in learning history.

CONCLUSION

This study found that the use of flipbooks as digital history teaching materials in elementary schools in the Lembang area was able to significantly increase student motivation, engagement, and understanding. Students showed improvements in average grades, critical thinking skills, and independent learning initiatives. Despite challenges such as limited technological devices and teacher readiness, with the right support, flipbooks have proven effective in creating more interactive and engaging learning experiences. The role of teachers as facilitators and innovators is crucial in integrating this technology into the curriculum, ensuring that students can make optimal use of flipbooks. Therefore, it is hoped that the use of flipbooks can be adopted more widely to improve the quality of education in other schools.

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