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Integrating Flipbook Learning Media to Enhance Geography Learning Outcomes

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ABSTRACT

Education plays a crucial role in improving the quality of human resources. Therefore, the learning process must be innovative and high-quality. However, the learning process remains teacher-oriented and has not utilized innovative media. This study aims to improve student learning outcomes in Geography, specifically on the distribution of flora and fauna in Indonesia, through the application of flipbook learning media. The subjects were students of class XI.3 of SMAN 1 Abung Semuli in the 2024/2025 academic year. This study employed Classroom Action Research (CAR) with a One-Group Pretest-Posttest Design, implemented in two cycles, each consisting of three meetings. Each cycle includes four stages: planning, implementation, observation, and reflection. The results showed an improvement in student learning outcomes. The average pretest score was 49.29 with a classical completion of 2.86%, increasing to 73.14 with a classical completion of 71.42% in cycle I, and reaching 81.43 with a classical completion of 88.67% in cycle II. In addition, student involvement in the learning process also increased, as indicated by their activeness in answering questions and conveying conclusions. Thus, the application of flipbook media has proven effective in improving learning outcomes and active participation of students in geography learning.

INTRODUCTION

Education is the primary means of developing intelligent, character-based human resources with the competencies to face the challenges of the times. Law No. 20 of 2003 concerning the National Education System affirms that education functions to develop abilities and shape the character and civilization of a dignified nation in order to enlighten the nation's life. Education also aims to develop the potential of students to become people who are faithful, pious, have noble morals, are healthy, knowledgeable, capable, creative, and independent. In the context of national development, education is the main foundation for national progress because the success of development in various sectors is highly dependent on the quality of human resources (Law No. 20 of 2003).

One important indicator of the success of the educational process is learning outcomes. According to Dimyati and Mudjiono (2006), learning outcomes are behavioral changes that occur in students after undergoing the learning process, encompassing cognitive, affective, and psychomotor aspects. Good learning outcomes indicate that students are able to understand the subject matter, apply it in real life, and experience positive changes in attitude. Meanwhile, according to Hamalik (2010), learning outcomes are a measure of success achieved by students after obtaining certain learning experiences.

Student learning outcomes do not emerge spontaneously but are influenced by various factors, both internal and external. Internal factors include motivation, interest, attention, readiness to learn, and the psychological condition of students. Meanwhile, external factors include the family environment, school environment, learning methods, and the use of learning media (Slameto, 2013). In the context of geography learning, the use of learning media plays a strategic role because geography studies complex physical and social phenomena and requires concrete visualizations to facilitate conceptual understanding . According to Sanaky (2013), learning media is anything that can be used to convey messages and stimulate students' thoughts, feelings, attention, and interests, thereby encouraging the learning process. Learning media serves to clarify the presentation of material so that it is not verbalistic and helps overcome limitations of space, time, and sensory abilities. Asyhar (2020) added that good learning media can facilitate active and independent learning processes and create positive interactions between teachers and students. Along with the development of digital technology, the world of education is required to adapt and integrate technology into the learning process. Teachers are no longer the sole source of information, but rather act as facilitators, leveraging technology to create innovative and enjoyable learning. One form of digital-based learning media innovation that is currently developing rapidly is the flipbook.

Flipbooks are electronic learning media in the form of interactive digital books that combine text, images, animation, audio, and video, making the presentation of material more engaging and communicative. Hamid and Alberida (2021) explain that flipbooks are a form of digitalized teaching materials that can create a more engaging learning experience than conventional print media. Flipbooks also enable students to learn independently, as they can be accessed anytime and anywhere. According to Maf'ula, Wahyuningsih, and Novitasari (2017), the use of flipbooks can improve learning outcomes by fostering interest, active involvement, and providing opportunities for students to learn at their own pace. Various studies have demonstrated the effectiveness of flipbook use in improving learning outcomes. Research by Achmadi, Rahmadhani, and Ardiansyah (2023) found that the use of flipbooks in geography learning significantly improved student learning outcomes, primarily because this medium facilitates students' understanding of abstract concepts through engaging visualizations. Meanwhile, research by Rahayu, Mulyani, and Sari (2021) showed that flipbooks can increase student motivation and learning activity due to their interactive and accessible interface. Similar findings were presented by Herawati and Muhtadi (2018), who stated that flipbooks can increase learning effectiveness by providing a multimedia-based learning experience.

However, based on initial observations at SMAN 1 Abung Semuli, the geography learning process still tends to be conventional. Teachers still dominate learning activities with lecture methods, while students act as passive recipients of information. The use of learning media is still limited to textbooks and static maps, which are less engaging for students. This condition has an impact on low student learning outcomes. Daily test results show that only around 31.42% of grade XI.3 students scored above the Learning Objective Achievement Criteria (KKTP), while the majority have not achieved completion. This fact emphasizes the need for innovation in learning, particularly through the use of digital learning media that can improve student motivation and learning outcomes. In the context of the Independent Curriculum, which emphasizes freedom of learning and student-centered learning, teachers have a crucial role in developing learning media that are innovative, contextual, and oriented to student needs. The Independent Curriculum provides space for students to learn independently and in-depth through diverse learning experiences (Kemendikbudristek, 2022). The use of digital media such as flipbooks is very much in line with this principle, because it allows students participate with the learning material.

From a learning theory perspective, this research is based on the social constructivism theory proposed by Vygotsky (in Suparno, 1997). This theory states that knowledge is built through social interactions and meaningful learning experiences. In the context of learning using flipbooks, students do not only receive information passively, but actively construct knowledge through visual exploration, conceptual understanding, and discussions with peers. In addition, Bruner's cognitive theory (in Dahar, 2011) is also relevant to this research, because it emphasizes the importance of visual representation and concrete experiences in helping students understand abstract concepts. Thus, the application of flipbook learning media is expected to have a positive impact on improving geography learning outcomes, especially on the distribution of flora and fauna in Indonesia. This media allows for interactive, interesting, and easy-to-understand presentation of material, so that students can be more active in the learning process and achieve optimal learning outcomes.

Based on the above description, this study aimed to determine the effect of flipbook media use on geography learning outcomes of eleventh-grade students at SMAN 1 Abung Semuli during the implementation of the Independent Curriculum. This research is expected to provide theoretical contributions to the development of technology-based digital learning media and practical contributions for teachers in creating innovative, efficient, and student-oriented learning.

METHODS

This study uses a quantitative approach with a quasi-experimental design. The quantitative approach was used because this study aims to test the effect of using flipbook learning media on students' geography learning outcomes objectively and measurably. According to Sugiyono (2021), quantitative research is a scientific method based on the philosophy of positivism, which emphasizes theory testing, variable measurement, and analysis of relationships between variables through numerical data. The research design used is a Nonequivalent Control Group Design, which is a design involving two groups of students who are not selected randomly, but have relatively similar characteristics. The experimental group received treatment in the form of learning using flipbook media, while the control group followed learning using conventional methods. Both groups were given an initial test (pretest) to determine initial abilities, and a final test (posttest) to see improvements in learning outcomes after the treatment was given.

This research was conducted at SMA Negeri 1 Abung Semuli, North Lampung Regency, during the even semester of the 2024/2025 academic year. The location was selected purposively, considering that the school had implemented the Independent Curriculum and had digital learning resources to support the research. The population in this study was all eleventh-grade students of SMA Negeri 1 Abung Semuli. From this population, the researcher designated eleventh-grade class as the experimental class and eleventh-grade class as the control class, with a total of 70 students. The sample was determined using purposive sampling, a sampling technique based on specific considerations that align with the research objectives (Arikunto, 2019).

The data in this study were collected through three main techniques: learning outcome tests, observation, and documentation. The learning outcome test was used to measure students' mastery of geography concepts before and after treatment. The test format used was a multiple-choice test consisting of 25 questions, structured based on the learning achievement indicators of the Independent Curriculum on the Distribution of Flora and Fauna in Indonesia topic. Observation was used to observe student activities and the implementation of learning during the process, while documentation was used to supplement secondary data such as student names, grades, and photos of learning activities. The research instrument, in the form of a learning outcome test, was structured based on a grid that had been validated by experts. Instrument quality testing was carried out through validity, reliability, difficulty level, and discriminatory power tests using SPSS version 25 software. Question items that met valid and reliable criteria were used in primary data collection. According to Sugiyono (2021), validity indicates the extent to which an instrument is able to measure what should be measured, while reliability indicates the consistency of measurement results over time.

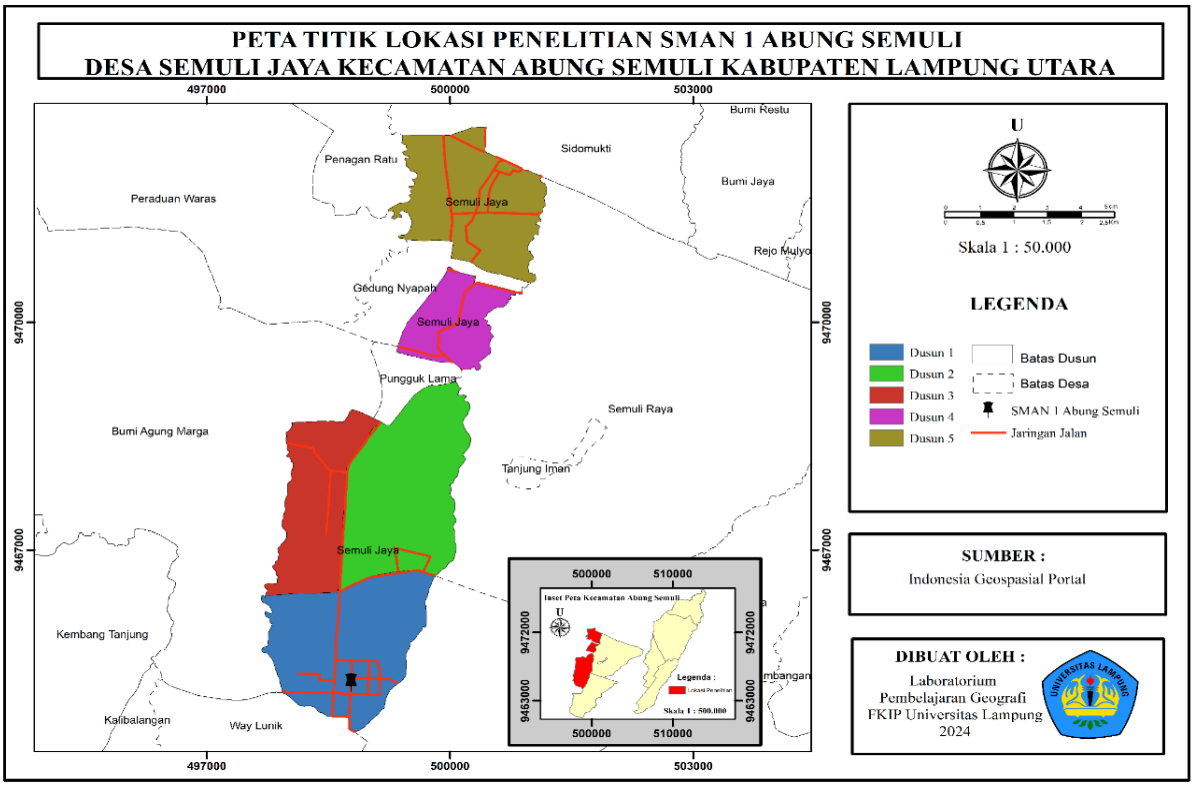

Figure 1. Research Location

The research data were analyzed using inferential statistical analysis techniques. The first stage was a normality test using the Kolmogorov-Smirnov test to ensure that the data were normally distributed. Next, a homogeneity test using the Levene test was performed to determine the equality of variance between the experimental and control groups. After the data met the assumptions of normality and homogeneity, a hypothesis test was conducted using the t-test (independent sample t-test) to determine whether there was a significant difference in learning outcomes between the two groups. The decision-making criteria were determined based on the significance value (Sig.) generated from the statistical test. If the Sig. value is <0.05, then the alternative hypothesis (Ha) is accepted, which means there is a significant difference between the learning outcomes of students taught using flipbook media and students taught using conventional learning. Conversely, if the Sig. value is >0.05, then the null hypothesis (H_0) is accepted.

Conceptually, this quasi-experimental method was used because educational research often does not allow for full control of all external variables that could influence research results (Campbell & Stanley, 1963). Therefore, the Nonequivalent Control Group Design was chosen to address these limitations while still providing a strong empirical picture of the effect of flipbook media use on geography learning outcomes. Through this design, it is hoped that the research will provide empirical evidence regarding the effectiveness of using interactive digital learning media in improving student learning outcomes, while simultaneously strengthening the implementation of the Independent Curriculum, which is oriented towards active and independent learning.

RESEARCH RESULTS AND DISCUSSION

This study aims to determine the effect of flipbook learning media on students' geography learning outcomes in the Distribution of Flora and Fauna in Indonesia topic at SMA Negeri 1 Abung Semuli. The use of digital media in the learning process is expected to create an engaging, interactive, and effective learning environment, in line with the principles of the Independent Curriculum, which emphasizes

student-centered learning.

Based on the pretest results, it was found that the initial abilities of students in the experimental and control classes were relatively balanced, with average scores of 67.48 and 66.85, respectively. After being given treatment in the form of implementing flipbook media in the experimental class and conventional learning in the control class, the posttest results obtained with an average score of 85.72 for the experimental class and 77.20 for the control class. This indicates a significant increase in learning outcomes in the class that used flipbook media.

Table 1. Frequency Distribution of Student Pretest Results

Value Range	Criteria	Frequency
86 – 100	Very good	0
75 – 85	Good	1
60 – 74	Enough	3
55 - 59	Low	13
< 54	Very Low	18
Amount		35

Source: Recap of *Pretest Results* .

Table 2. Frequency Distribution of *Posttest* I Results of Students

Value Range	Criteria	Frequency
86 – 100	Very good	0
75 – 85	Good	25
60 – 74	Enough	9
55 – 59	Low	1
< 54	Very Low	0
Amount		35

Source : Recap of *Posttest Results* from Cycle I.

Table 3. Frequency Distribution of Posttest II Results of Students

Value Range	Criteria	Student
86 – 100	Very good	5
75 - 85	Good	26
60 – 74	Enough	4
55 - 59	Low	0
< 54	Very Low	0
Amount		35

Source: Recap of Cycle II Test Results.

The results of the t-test analysis (independent sample t-test) showed a significance value of 0.000 < 0.05, indicating a significant difference between the learning outcomes of students taught using flipbook media and those taught using conventional methods. This significance value indicates that the use of flipbooks has a significant impact on improving student learning outcomes. Furthermore, the improvement in learning outcomes in the experimental class was also supported by observational data showing an increase in student learning activities, such as participation in discussions, asking questions, and interest in participating in learning.

Table 4. N-Gain Test

Treatment	Mark	*N-Gain*	Interpretation
Pretest	49.29		
Posttest cycle I	73.14	0.4724	Currently
Posttest cycle II	81.43	0.3192	Currently

Source: SPSS Data Processing, 2024.

The Influence of Flipbook Media on Learning Outcomes

The results of this study indicate that the application of flipbook media has a positive and significant effect on improving geography learning outcomes. This finding supports Bruner's cognitive theory, which states that learning will be more effective if the material is presented through visual and concrete representations, because visualization can help students understand abstract concepts (Dahar, 2011). The distribution of flora and fauna is a topic that requires spatial analysis skills and regional visualization; therefore, the use of flipbooks containing images, interactive maps, and illustrations makes it easier for students to understand the concept. Furthermore, these results are also in line with Vygotsky's social constructivism theory (in Suparno, 1997), which emphasizes that the learning process occurs through social interaction and collaboration. In flipbook-based learning, students not only receive information from the teacher but also actively explore the material, discuss it, and build understanding through visual and interactive experiences. This aligns with the principles of the Independent Curriculum, which demands active and meaningful learning.

The findings of this study also align with those of Achmadi, Rahmadhani, & Ardiansyah (2023), who found that the use of flipbooks significantly improves geography learning outcomes by encouraging student engagement in learning activities. Research by Rahayu, Mulyani, & Sari (2021) also showed that flipbooks can improve student motivation and learning outcomes due to their interactive and engaging design. Thus, these research findings strengthen empirical evidence that interactive digital media has significant potential to improve the quality of learning in secondary schools.

Student Activeness and Involvement in Learning

Improved learning outcomes are inseparable from increased student activity and engagement during the learning process using flipbooks. Observations showed that students in the experimental class were more active in asking questions, answering questions, discussing questions, and summarizing the material compared to students in the control class. This demonstrates that flipbooks can foster students' intrinsic motivation for independent and active learning.

According to Sardiman (2014), learning motivation is an internal and external drive that fosters a passion for learning in students. When learning media captures students' attention, their motivation and engagement increase. Flipbooks feature elements of color, animation, and interactivity that stimulate curiosity and encourage independent exploration. Therefore, the use of flipbooks not only improves cognitive learning outcomes but also fosters a sense of responsibility for the learning process itself. This finding is also supported by Skinner's behaviorist theory, which emphasizes the importance of reinforcement in the learning process. Flipbooks provide students with immediate feedback through visual displays and interactive features that help them determine whether their understanding is correct. This is a form of positive reinforcement that increases students' learning motivation (Hamalik, 2010).

Relevance to the Independent Curriculum

The results of this study are also highly relevant to the spirit of the Independent Curriculum implementation, which emphasizes flexibility and project-based learning, collaboration, and independent learning. This curriculum requires teachers to provide diverse and contextual learning experiences. The use of flipbooks supports this principle because it allows students to learn actively, explore digital learning resources, and understand geographic concepts through a visual and contextual approach. According to the Ministry of Education, Culture, Research, and Technology (2022), learning in the Independent Curriculum must be oriented towards developing students' competencies and character through meaningful learning processes. With flipbooks, students can learn at their own pace

and learning style, making learning more adaptive to individual differences.

Comparison with Conventional Methods

Compared to conventional learning, the use of flipbooks is far more effective in improving learning outcomes. In conventional learning, teachers tend to be the center of information (teacher-centered), while students simply receive material without much opportunity for active participation. This makes students quickly bored and struggle to understand conceptual material. In contrast, the use of flipbooks provides opportunities for students to be actively involved, explore independently, and understand the material through engaging visual displays (Asyhar, 2020). In addition to improving learning outcomes, flipbooks also help students develop 21st-century skills such as critical thinking, collaboration, communication, and digital literacy. Therefore , the implementation of this media is in line with the direction of national education policy which emphasizes digital transformation in the learning process (Kemendikbudristek, 2023).

Implications of Research Results

Practically, the results of this study indicate that teachers need to expand the use of digital media in the learning process, not only in geography but also in other subject areas. Flipbooks can be an efficient and economical alternative medium to support learning based on the Independent Curriculum.
Theoretically, the results of this study strengthen the theory of social and cognitive constructivism, which emphasizes that learning will be more effective when students actively participate and have meaningful learning experiences.

CONCLUSION

Based on the results of the research and discussion that has been done, it can be concluded that the use of flipbook learning media has a significant effect on the geography learning outcomes of class XI students at SMA Negeri 1 Abung Semuli on the material Distribution of Flora and Fauna in Indonesia. The results of the t-test show a significance value of 0.000 <0.05, which means there is a real difference between the learning outcomes of students taught using flipbook media and students taught with conventional methods. The increase in learning outcomes in the experimental class shows that the use of flipbook media is effective in helping students understand abstract geographic concepts through the presentation of visual, interactive, and contextual materials. This media is able to foster learning motivation, increase student activity, and create a fun and meaningful learning atmosphere. Thus, flipbooks not only have an impact on cognitive aspects, but also on the development of students' affective and social aspects through collaborative activities during learning.

Theoretically, the results of this study reinforce Vygotsky's social constructivism theory, which asserts that knowledge is constructed through social interactions and active learning experiences. Furthermore, these findings align with Bruner's cognitive theory, which states that visual representations in learning can strengthen conceptual understanding. Practically, the results of this study imply that teachers need to utilize digital learning media such as flipbooks as an innovative alternative to improve the effectiveness of geography learning, particularly in the implementation of the Independent Curriculum, which emphasizes student-centered learning. Thus, it can be affirmed that the application of flipbooks is worthy of use as an effective, engaging, and relevant learning strategy to meet the needs of 21st-century education. This media not only improves learning outcomes but also supports the development of independent, creative, and adaptive students to the development of digital technology in education.

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