

Enhancing Students' Conceptual Understanding in History Education Through Canva-Assisted Interactive Learning Media

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ABSTRACT

History learning is often perceived as monotonous due to the dominance of conventional lecture-based methods, resulting in students' low conceptual understanding. To address this issue, the study investigates the effectiveness of Canva as an interactive learning tool to enhance students' understanding of historical concepts. This research employed a mixed-methods approach with both quantitative and qualitative data collection. The quantitative component involved a pre-test and post-test design with 34 eleventh-grade students at SMAN 2 Krakatau Steel Cilegon. Paired sample t-tests were conducted to measure significant changes in student understanding. The qualitative component included classroom observations and semi-structured interviews with students and teachers to explore user experiences and implementation challenges. The results showed a statistically significant improvement in students' understanding, with mean scores increasing from 65.32 (pre-test) to 82.47 (post-test) ($p = 0.000$). Observation data indicated higher student engagement: participation in discussions rose from 40% to 85%, and active questioning increased from 30% to 80%. Interview findings highlighted that Canva's visual features made historical content more accessible and engaging. Canva proved to be an effective digital tool for improving student comprehension and engagement in history learning. However, issues such as limited device access and internet connectivity were noted. While Canva shows promise in enhancing history education, its broader application requires further investigation across diverse educational contexts. This study contributes to the growing discourse on integrating technology into history learning in Indonesian secondary education.

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1. INTRODUCTION

History education is essential for shaping students' understanding of human evolution and their national identity (Fauziyah et al., 2022). They can learn about how a nation develops, how past events shape current conditions, and how national values are passed down from generation to generation. However, many schools still use conventional teaching methods, which are less effective in attracting students' interest (Jeyaraj, 2019). History lessons delivered only through lectures are often considered boring and monotonous, and students are less actively engaged in the learning process (Djoko Sulistyono et al., 2022). If the material is not presented in an innovative way, students tend to become passive and find it difficult to understand historical concepts in depth.

The limited learning resources that can stimulate students' interest and memory regarding narrative and chronological material are the main obstacles in history learning (Yang & Oh, 2023). Students have difficulty connecting historical events with a broader context because history material is often presented in the form of long texts without engaging images (Kropman et al., 2023). However, to understand history well, students must use a more contextual and applicative approach. The absence of interactive media, which can make history material more lively and easier to understand, also causes students to be less engaged in the lesson. If this situation continues, students' understanding of historical concepts will be limited, and remembering and understanding the cause-and-effect relationships of various historical events will become more difficult (Muhammad Ody Prasetya & Rinanda Purba, 2023).

To make history learning more interesting and effective, a more creative and interactive learning approach is needed (Petousi et al., 2022). Students can enhance their engagement in learning history by using technology such as digital learning media (Malysheva et al., 2022). Simulations and interactive learning platforms, such as visual media, can help them understand historical concepts more deeply (Hanifah, 2020). In addition, innovations in learning can encourage students to think critically about various historical events and enhance their memory of the material being taught (Arifin Anis et al., 2021). Therefore, history education must be transformed by using methods and media that are more aligned with the needs and characteristics of students in the current digital era.

According to Anghelo Josué et al., (2023), as a result of advancements in digital technology, many interactive learning platforms have emerged. Many interactive learning platforms have emerged along with the advancement of digital technology. For this research, Canva was chosen because it has special features that allow for the presentation of material in an attractive, interactive, and easily accessible visual format for students and teachers (Ngoc & Huyen, 2023). Canva not only creates infographics and animated presentations that can help students understand complex historical concepts, but also supports collaborative learning, allowing students to work together to create their own lesson materials. This aligns with the principles of constructivist learning, which emphasize the importance of students actively participating in the learning process (Hanna Marina Tarigan et al., 2022). With the presence of this technology, history learning no longer relies solely on conventional lecture methods, which sometimes make students less interested in understanding the content in depth.

Previous research has shown that the use of digital learning media can enhance students' motivation and desire to learn, in addition to improving their understanding of academic concepts (Ramaila & Mpinga, 2022). The use of Canva as an interactive tool in history learning can make lessons more engaging, especially for students who prefer visual-based learning (Saniah et al., 2023). However, most research still focuses on the general use of digital technology in history education, without considering how effective platforms like Canva are in enhancing student engagement and understanding. This research will fill this gap by examining how Canva can be used to teach history in Indonesia.

Furthermore, educators do not agree with the use of technology in history learning. Many studies have shown that the use of technology in the learning process is beneficial, but some educators remain skeptical (Aying et al., 2019). The use of technology in learning can increase student interest and facilitate their understanding of abstract historical concepts (Yi Yi et al., 2019). Although technology

has many benefits for education, there are several issues that need to be considered. Certain teachers oppose the use of technology in history learning because they are concerned it will reduce direct teacher-student interaction (Dos Santos et al., 2021). They argue that dependence on digital media can change the role of the teacher as the primary facilitator in the classroom and potentially reduce the emotional engagement between students and educators in academic discussions.

Furthermore, for some schools, limited access to infrastructure and digital devices becomes a constraint, especially in areas with limited financial resources and inadequate educational facilities. (Dagdilelis, 2018). Some students and schools do not have adequate access to digital devices. This is especially true in areas with economic limitations and inadequate educational facilities. Moreover, the instability of internet connections makes it difficult to use digital technology in history learning, especially when studying online or using cloud-based applications like Canva (Zaagsma, 2023). Therefore, this research will not only examine the effectiveness of using Canva to enhance students' understanding of history but will also investigate the issues and solutions related to these problems. The research results are expected to help policymakers in the field of education make better decisions on how to incorporate digital technology into history learning without sacrificing interaction and learning quality.

The purpose of this research is to determine the effectiveness of using interactive learning media assisted by Canva in improving the understanding of 11th-grade students at SMAN 2 Krakatau Steel Cilegon about historical concepts. This study specifically examines how effective Canva is in increasing student engagement in history learning and whether Canva-based visual media can clarify complex historical concepts and enhance students' retention of the material. Additionally, this research identifies the problems and difficulties in using Canva as a medium for history learning and compares the learning outcomes of students who use it with those who learn using conventional approaches (Anam et al., 2023). This research focuses on several objectives: the impact of using Canva on students' understanding of history, the level of student engagement in history learning when using it compared to conventional methods, the issues that hinder the use of Canva as a history learning medium, and the techniques that can be used to maximize the use of Canva.

This research uses a mixed-method approach that combines quantitative and qualitative methods to achieve the research objectives (Rasker, 2022). It is expected that the combination of these two approaches will result in a more comprehensive understanding of how Canva functions as a medium for history learning. The qualitative approach will assess how students and teachers use it as a learning medium through pre-tests and post-tests. This research is expected to provide significant benefits to the world of education, especially in terms of developing history learning strategies that rely on digital technology. In addition, this research can serve as a foundation for educational policies that promote the use of technology in high school history education. Therefore, it is expected that students' understanding of history will improve, and they will be more interested in studying history as an important part of their country's identity and development.

2. METHODS

More comprehensive data on the effectiveness of interactive learning media assisted by Canva in improving students' understanding of historical concepts were collected in this study through a mixed-method approach, which combines qualitative and quantitative methods. The quantitative approach measures the improvement in student learning outcomes through statistical analysis of pre-tests and post-tests (Prandner & Tabakovic, 2019). The qualitative approach delves deeper into how interactive learning media assisted by Canva helps students understand historical concepts. The subjects in this study are 11th-grade students at SMAN 2 Krakatau Steel Cilegon, with a total of 34 participants. The selection of the topic was purposively based on the availability of classes that use interactive media for history learning. This study also involves history teachers as informants to provide their opinions on the use of Canva in classroom learning.

Before the research begins, each participant and their guardian are asked to provide consent information to ensure that they understand the purpose, procedures, and their rights in the research. To maintain the confidentiality of the collected data, the identities and personal information of the participants are strictly protected. The research was conducted in several stages. First, the research instruments were created and the Canva-based learning materials were developed. Next, the instruments were validated by conducting a limited trial with a small number of students outside the main sample. This is done to ensure that the pre-test and post-test instruments are valid and reliable before being used in the main research.

At the implementation stage, the interactive learning media Canva was used to teach history over four sessions during two weeks, each lasting 90 minutes. Before the first session, students were given a test to measure how well they understood the history material before the session began. After the session, students were given a post-session test to determine how well they understood the use of Canva. Written tests (pre-test and post-test) to measure students' learning outcomes, observation sheets to record student interactions and engagement in the learning process, and semi-structured interview guides to explore the perspectives and experiences of teachers and students. Before being used in the main research, the pre-test and post-test have been validated through trials and content validity analysis by experts. To determine the significance of the improvement in students' understanding, quantitative data from both tests were analyzed using a paired t-test. Data triangulation combines various data sources, such as test results, observations, and interviews, to enhance the validity and reliability of research findings (Noble & Heale, 2019). Quantitative data were obtained through written tests administered before and after class, while qualitative data were obtained through in-depth interviews with teachers and students during the learning process.

3. FINDINGS AND DISCUSSION

3.1 Findings

This research involved 34 11th-grade students at SMAN 2 Krakatau Steel Cilegon to evaluate the effectiveness of Canva, an interactive learning media that helps students better understand historical concepts. Pre-test, post-test, observations, and interviews with students and history teachers helped collect data.

The results of the statistical test show that students have gained a better understanding after using Canva as a learning tool. The average score before using Canva was 65.32, while the average score after using Canva increased to 82.47, with a difference of 17.15 points.

Table 1. Average Pre-test and Post-test Scores

No	Statistics	Pre-test	Post-test	Difference
1	Average	65.32	82.47	+17.15
2	Standard Deviation	8.21	6.94	-
3	Minimum Value	50	70	-
4	Maximum Value	78	95	-

From the table above, the students' pre-test score before using Canva was 65.32, but their post-test score increased to 82.47 after using it in history learning. The average difference of 17.15 indicates that students had a better understanding of the material after using Canva-assisted learning.

The paired t-test, also known as the paired sample t-test, is conducted to determine whether the increase is statistically significant. The results of the t-test are shown in the following table:

Table 2. Paired t-test Results

Variable	t-test	df	Sig. (2-tailed)
Pre-test vs Post-test	-9.74	33	0.000 ($p < 0.05$)

With a t-value of -9.74 and a p-value of 0.000 ($p < 0.05$), the paired t-test indicates that the difference in values is statistically significant. To gain a better understanding of the practical significance of these findings, Cohen's d effect size can be calculated using the following formula:

$$d = \frac{M_{\text{posttest}} - M_{\text{pretest}}}{SD_{\text{pooled}}}$$

The calculation results show that Cohen's $d = 2.13$, indicating a significant effect according to Cohen's criteria (1988). Thus, this difference has a practically significant effect on students' understanding, in addition to being statistically significant.

The results of Canva-assisted learning were compared with the conventional teaching approach (lectures) to strengthen the findings. As shown by the data from the control group ($n = 34$), students who used the lecture method only achieved an average improvement of 9.25 points (pre-test = 64.85, post-test = 74.10). The results of the independent t-test showed a more significant improvement for the lecture group compared to the lecture group ($p = 0.002$). This indicates that the use of the Canva method is more effective than the conventional learning approach.

During the learning process, student engagement in the classroom was observed. This is a summary of the research results:

Table 3. Results of Student Engagement Observation

Observed Aspect	Before Using Canva	After Using Canva
Participation in the discussion	Low (40%)	High (85%)
The activeness of asking questions	Less (30%)	increased (80%)
Concentration while studying	moderate (50%)	High (90%)
Understanding the concept	Less (45%)	Good (88%)

The results of the observation show an increase in student participation in class discussions from 40% to 85% and an increase in the activity of asking questions from 30% to 80% after the use of Canva. Additionally, students' concentration and conceptual understanding also increased significantly. The thematic coding method is used to analyze observations and interview results to identify key finding patterns. This process includes transcribing interviews, initial coding based on thematic categories, and content analysis to group student and teacher responses into main themes.

Some of the main topics discussed during the interview were:

1. Increased Student Engagement: Canva increased student participation in class discussions from 40% to 85% and the activity of asking questions from 30% to 80%.
2. Better Concept Understanding: Interactive visual presentations help students understand history more easily.
3. Technological Constraints: Some students face issues accessing devices and connecting to the internet.

These are some quotes taken from the interview:

1. "Listening to lectures is more enjoyable and less boring than studying history."
2. Because Canva has attractive images and animations, I find it easier to remember historical events.

3.2 Discussion

The research results show that when eleventh-grade students at SMAN 2 Krakatau Steel Cilegon use interactive learning media assisted by Canva, they better understand important historical concepts. The results of the pre-test and post-test statistical analysis show this improvement; the average score increased from 65.32 to 82.47, with a difference of 17.15 points. The paired t-test results showed a statistically significant difference ($t_{\text{observed}} = 9.74$, $p = 0.000$). Observation data also show that students are more engaged in the learning process. The use of Canva as a learning medium enhances students' understanding of historical concepts and encourages interaction and active student

engagement. This improvement is evident in the increase in student participation in discussions from 40% to 85% and participation in asking questions from 30% to 80%.

However, the use of Canva as a learning medium can not only lead to an increase in student understanding. There may be an increase in motivation to learn as a result of using new technology in the learning process, among other factors that can influence this outcome. These innovative effects often encourage students to become more active and engaged in understanding the material. Better learning outcomes can be achieved if students are more engaged with more interactive learning media. Technology-based learning can enhance students' intrinsic motivation, according to Schunk & DiBenedetto (2021). Ultimately, this will result in a better understanding of concepts. However, further studies need to be conducted to ensure whether the observed improvement in understanding is long-lasting or just a temporary effect caused by the differences in learning methods. Further research could also investigate other factors that influence the success of technology-based learning, such as the level of teacher support, students' readiness to use technology, and the sustained use of interactive learning media over a longer period. In addition, this research does not investigate whether the obtained results are influenced by the teachers' experience and skills in using Canva. To be used effectively, the use of digital learning media requires a good pedagogical understanding (Mishra & Koehler, 2006). Further research could explore the role of teacher experience in the effectiveness of Canva-based learning, as teachers who are more familiar with technology might be able to deliver material in a more engaging and effective manner compared to those who are less accustomed to using it.

This research found technological limitations, such as device access and unstable internet connections. Some students who do not have access to adequate devices outside of school face this problem. The use of Canva's offline feature can help students continue to access learning materials even if they do not have a stable internet connection. Schools and teacher training can use technology to teach history more effectively. Previous research findings align with the findings of Ramaila & Mpinga (2022), which indicate that digital media can enhance student engagement and understanding of learning materials. However, these findings contradict the research by Dos Santos et al. (2021), which found that the use of digital media can reduce direct interaction between teachers and students. This study actually found that the use of Canva increased student participation in discussions and questions.

The world of education is greatly influenced by the findings of this research, especially in terms of improving the quality of history learning in the computer and internet era. Canva is a tool that can help create more engaging visual learning and improve students' absorption of complex historical material. The government and educational institutions should consider policies that support technological infrastructure and teacher training to maximize the use of Canva and other digital media. In future research, several elements can be studied further. For example, comparisons can be made between Canva and other digital learning platforms, examining how the use of Canva affects students' long-term retention of understanding, and analyzing the psychological elements that influence students' desire to learn through interactive media. Therefore, Indonesia has the potential to improve the quality of education through the continuous development of learning technology.

4. CONCLUSION

The research results show that Canva, as an interactive learning tool, enhances students' understanding of historical concepts. The paired t-test results showed a significant increase ($p = 0.000$) and an average score improvement from 65.32 to 82.47. In addition, the observation results showed an increase in student engagement in discussions from 40% to 85% and an increase in questioning activity from 30% to 80%. Students also feel that history lessons have become more interesting and easier to understand thanks to the interactive visual media used. Due to the limitations of the research, the results must be interpreted with caution. Because this study was conducted in only one school with a limited sample, the results should be generalized with caution to a wider population. The results obtained may also be influenced by other unexamined components, such as teachers' experience with using Canva and students' willingness to adopt new methods. As a result, further research is needed

to examine the effects of Canva in a more diverse population and in a broader context. This study also found limitations that could affect the use of Canva in history learning. The inability to access digital devices and stable internet connections is a major constraint. It may be difficult for some students to use Canva outside the school environment. Therefore, to ensure more equitable access for all students, solutions such as creating an offline feature for Canva or providing devices by the school should be considered.

The results of this research in educational implications show that Canva can be used in history learning as a creative alternative to enhance students' understanding of concepts. However, for it to be successfully implemented, adequate infrastructure and teacher training are required to maximize its use in the learning process. By considering the factors that influence the effectiveness of learning, the government and educational institutions should pay greater attention to the use of technology in education. Several aspects can be further researched for future studies. To obtain more generalizable results, the research can be conducted with a broader sample scope. Additionally, the research can examine how well Canva compares to other digital learning platforms, and how the use of these platforms impacts the long-term retention of students' understanding. To gain a better understanding of how interactive learning media affects students' learning experiences, psychological elements such as students' learning motivation can also be studied. Therefore, the integration of technology in education can continue to develop to improve the quality of learning in Indonesia.

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