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The Effectiveness of AI-Based Canva Learning Media on the Learning Outcomes of Islamic Cultural History for Grade X Students at MAN Sidenreng Rappang

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Abstract: Penelitian ini bertujuan untuk mengetahui efektivitas pemanfaatan media pembelajaran Canva berbasis AI dalam mendukung peningkatan hasil belajar Sejarah Kebudayaan Islam pada siswa kelas X MAN Sidenreng Rappang. Penelitian ini menggunakan pendekatan kuantitatif dengan rancangan pre-eksperimental melalui desain one-group pretest-posttest. Populasi penelitian berjumlah 130 siswa kelas X MAN Sidenreng Rappang dengan sampel sebanyak 26 siswa pada satu kelas utuh yang dipilih menggunakan teknik purposive sampling. Pengumpulan data dilakukan melalui tes hasil belajar yang terdiri atas 25 butir soal pilihan ganda, observasi, serta kuesioner dengan bentuk respons dikotomis. Data dianalisis menggunakan statistik deskriptif dan uji paired-samples t-test. Hasil analisis menunjukkan bahwa skor rata-rata siswa mengalami peningkatan dari 48,65 (SD = 12,45) pada tahap pretest menjadi 82,31 (SD = 8,33) setelah diberikan perlakuan melalui posttest, dengan peningkatan rata-rata sebesar 33,65 poin. Uji paired-samples t-test menghasilkan nilai Sig. (2-tailed) = 0,000 < 0,05, sehingga terdapat perbedaan yang signifikan. Nilai rata-rata N-Gain sebesar 0,6573 (65,73%) termasuk dalam kategori efektif. Selain peningkatan hasil tes, tanggapan siswa terhadap pembelajaran menunjukkan kecenderungan positif pada seluruh indikator yang diamati. Dengan demikian, penggunaan media pembelajaran Canva berbasis AI dapat dinyatakan efektif dalam meningkatkan hasil belajar Sejarah Kebudayaan Islam pada siswa kelas X MAN Sidenreng Rappang.
Kata kunci: Canva AI, media pembelajaran digital, hasil belajar, Sejarah Kebudayaan Islam, Madrasah Aliyah

Abstrak: This study aimed to determine the effectiveness of using AI-powered Canva as a learning medium to enhance learning outcomes in the subject of Islamic Cultural History among Grade X students at MAN Sidenreng Rappang. The study employed a quantitative approach with a pre-experimental design, specifically the one-group pretest-posttest design. The population consisted of 130 Grade X students at MAN Sidenreng Rappang, with a sample of 26 students from a single intact class selected using purposive sampling. Data collection was carried out through a learning achievement test comprising 25 multiple-choice questions, observations, and a questionnaire with dichotomous responses covering aspects such as the attainment of learning objectives, learning outcomes, student engagement and discipline, and behavioral changes during the learning process. The data were analyzed using descriptive statistics and a paired-samples t-test. The analysis revealed that the students' mean score increased from 48.65 (SD = 12.45) in the pretest to 82.31 (SD = 8.33) in the posttest, representing an average increase of 33.65 points. The paired-samples t-test yielded a Sig. (2-tailed) value of 0.000 < 0.05, indicating a statistically significant difference. The mean N-Gain score of 0.6573 (65.73%) fell into the effective category. In addition to the improvement in test scores, student feedback indicated a positive trend across all observed indicators. Based on these results, the use of AI-powered Canva is considered effective in improving learning outcomes in the History of Islamic Culture for Grade X students at MAN Sidenreng Rappang.
Keywords: Canva AI, digital learning media, learning outcomes, History of Islamic Culture, Madrasah Aliyah students

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Introduction

Education is a fundamental aspect of national development because it plays a role in forming the quality of human resources who are faithful, knowledgeable, noble in character, and able to face the developments of the times. This is in line with the mandate of Law of the Republic of Indonesia Number 20 of 2003 concerning the National Education System, which states that national education aims to develop the potential of students so that they become human beings who believe in and fear God Almighty, have noble character, are intelligent, creative, and responsible. In order to achieve these goals, the implementation of education is required to continue innovating, especially in the learning process.

One of the subjects that has a strategic role in character formation and understanding of Islamic values in madrasah is Islamic Cultural History (Sejarah Kebudayaan Islam/SKI). The SKI subject is not only oriented towards mastering historical knowledge, but also aims to instill exemplary values, religious attitudes, and understanding of the development of Islamic civilization. However, in practice, learning Islamic Cultural History often faces various problems, including low student interest in learning, less active student involvement, and suboptimal learning outcomes. Several studies show that history learning, including SKI, is often considered boring because it tends to emphasize memorizing facts, figures, and chronology of events, and is dominated by lecture methods and the use of textbooks (Susanto, 2014). This learning pattern causes students to have difficulty understanding the meaning and values contained in historical events, thus impacting low motivation and learning outcomes (Anam & Sunhaji, 2025).

Based on the results of initial observations at MAN Sidenreng Rappang (Sidrap), learning Islamic Cultural History is still dominated by the use of conventional media and has not fully utilized innovative digital learning media. This condition causes students to tend to be passive and less enthusiastic in participating in learning. This indicates the need for learning media innovations that are able to increase student interest, involvement, and learning outcomes. Entering the era of 21st-century education, learning is required to integrate information and communication technology to create student-centered learning (Trilling & Fadel, 2009). Therefore, teachers need to develop learning media that are not only informative, but also interesting and interactive.

Theoretically, the use of multimedia-based learning media is supported by the Multimedia Learning Theory proposed by Mayer (2002). This theory explains that students will learn more effectively if information is presented through a combination of text and visuals designed according to cognitive principles. One digital learning medium that is developing rapidly and is easily accessible to educators is Canva for Education. Canva is a graphic design platform that allows teachers to create various learning media such as interactive presentations, infographics, educational posters, and visual modules with attractive and systematic displays. Along with technological developments, Canva has also been equipped with various Artificial Intelligence (AI)-based features, such as Magic Write, Text to Image, and automatic design recommendations. These features help teachers in compiling learning materials more quickly, creatively, and according to the characteristics of students.

Scientific studies regarding the application of AI in education show positive results. Zawacki-Richter et al. (2019) through a systematic review concluded that AI has great potential in improving learning effectiveness, material personalization, and student engagement. In addition, the results of meta-analyses conducted by Krstić et al. (2022) and Zhang et al. (2025) show that the use of AI-based technology in learning has a significant positive influence on student learning outcomes, especially when the technology is integrated pedagogically into the learning process. Although research on the use of Canva as a learning medium has been widely conducted on general subjects, research that specifically examines the effectiveness of AI-based Canva learning media on learning outcomes in Islamic Cultural History at madrasah aliyah, particularly in the local context of MAN Sidenreng Rappang, is still very limited. Therefore, empirical research is needed to test the extent to which AI-based Canva learning media is effective in improving the learning outcomes of Islamic

Cultural History for Grade X students at MAN Sidenreng Rappang.

METHODS

This study used a quantitative approach with a pre-experimental design, specifically the one-group pretest–posttest design. According to Sugiyono (2019), the quantitative approach is a research method based on the philosophy of positivism, used to examine specific populations and samples. Data collection techniques use research instruments, and data analysis is statistical in nature to test predetermined hypotheses. In this design, only one class was involved as the research subject, which was given a pretest before the treatment and a posttest after the treatment was applied. There was no comparison group, so the research results were obtained by comparing the pretest and posttest scores in the same class.

Participants

According to Sugiyono (2019), a population is the entire subject of research that has certain characteristics determined by the researcher to be studied and from which conclusions are drawn. The population in this study consisted of 130 Grade X students at MAN Sidenreng Rappang. The sample consisted of 26 students from a single intact class (Class X.A) selected using purposive sampling. The selection of this intact class was based on consideration of the readiness of facilities, the suitability of the learning schedule, and the willingness of the school to support the research process.

Sampling Procedure

The sampling procedure in this study used data collection techniques consisting of tests, observations, and questionnaires to obtain objective and measurable data. The learning achievement test consisted of 25 multiple-choice questions covering the material on the economic life of Makkah society before Islam. Observations and questionnaires with dichotomous (Yes/No) responses were used to measure aspects of the attainment of learning objectives (KKTP), learning outcomes, student engagement and discipline, and behavioral changes during the learning process. Before conducting hypothesis testing, prerequisite tests were performed, including a normality test using the Shapiro-Wilk method to determine the data distribution, given that the sample size was N = 26 (< 50).

Materials and Equipment

The instruments used in this study included: (1) a learning achievement test consisting of 25 multiple-choice questions to measure student learning outcomes in Islamic Cultural History; (2) observation sheets and dichotomous questionnaires covering indicators of KKTP attainment, learning outcomes, student engagement and discipline, and overall behavioral changes; and (3) AI-based Canva learning media developed as the treatment intervention, which included interactive presentations, infographics, and visual materials related to the SKI content.

Procedure

The data collection technique in this study used testing and measurement methods. The research was conducted at MAN Sidenreng Rappang, located on Jalan Poros Pinrang Number 1A, Kelurahan Duampanua, Kecamatan Baranti, Kabupaten Sidenreng Rappang, South Sulawesi, from July 6 to August 6, 2026. The steps were as follows: students were given a pretest to measure their initial ability; students then received learning treatment using AI-based Canva media on the Islamic Cultural History material; after the treatment, students were given a posttest to measure learning outcomes; and finally, questionnaires were administered to capture student responses regarding engagement, discipline, and behavioral changes.

Design or Data Analysis

Data analysis in this study was conducted quantitatively through several stages. First, the data were analyzed using descriptive statistical techniques to obtain the mean, standard deviation, minimum, and maximum values. Next, a normality test was conducted using Shapiro-Wilk to determine whether the data were normally distributed. Hypothesis testing was performed using the paired-samples t-test to determine the significance of differences between pretest and posttest scores at a significance level of $\alpha = 0.05$. In addition, Normalized Gain (N-Gain) analysis was used to determine the level of effectiveness of the treatment. According to Sugiyono (2019), hypothesis testing aims to determine whether the

research hypothesis is accepted or rejected based on empirical data.

Results

This study aimed to determine the effectiveness of AI-based Canva learning media on the learning outcomes of Islamic Cultural History for Grade X students at MAN Sidenreng Rappang. The study was conducted on 26 students as the research sample. The data were obtained from pretest and posttest scores on a 25-item multiple-choice test, as well as questionnaire responses. Data analysis was carried out using the IBM SPSS program.

The description of the research data aims to provide a general overview of the mean and standard deviation values of the pretest and posttest. The descriptive statistical data are as follows:

Table 1. Descriptive Statistics

Statistic	Pretest	Posttest
N	26	26
Mean	48.65	82.31
Std. Deviation	12.45	8.33

Based on the table, it is known that the average pretest score of the students was 48.65 with a standard deviation of 12.45. After being given treatment in the form of learning using AI-based Canva media, there was a significant increase in the posttest measurement. The average student score increased to 82.31 with a standard deviation that decreased to 8.33. The decrease in the standard deviation value on the posttest indicates that the distribution of student scores became more homogeneous and consistently clustered around a higher average value. Descriptively, there was an increase in the average score of 33.65 points from before to after the use of AI-based Canva learning media.

Normality Test

The normality test was conducted to ensure that the sample data obtained from the pretest and posttest results of Grade X students at MAN Sidenreng Rappang were normally distributed. Given that the number of research subjects was 26 students (N < 50), the normality test was evaluated using the Shapiro-Wilk method. The decision criterion states that if the significance value (Sig.) > 0.05, then the data are declared normally distributed.

Table 2. Normality Test Results (Shapiro-Wilk)

Variable	Statistic	df	Sig.	Description
Pretest	0.955	26	0.301	Normal
Posttest	0.954	26	0.281	Normal

Based on the table above, the significance values (p-value) obtained for the pretest data were 0.301 and for the posttest data were 0.281. Because the Sig. values of both variables exceeded the threshold of 0.05 (0.301 > 0.05 and 0.281 > 0.05), it can be concluded that the learning outcome data of Islamic Cultural History before and after the application of AI-based Canva learning media were normally distributed. The implication of fulfilling this normality assumption is that inferential statistical analysis to test the research hypothesis can be continued using parametric statistics, namely the Paired Samples T-Test.

Hypothesis Test (Paired Samples T-Test)

Hypothesis testing was conducted to determine whether there was a significant difference in the learning outcomes of Islamic Cultural History for Grade X students at MAN Sidenreng Rappang before (pretest) and after (posttest) the application of AI-based Canva learning media. Given that the research data had met the normality assumption, the statistical analysis used was the parametric Paired Samples T-Test. The decision criterion states that if the significance value Sig. (2-tailed) < 0.05, then Ha is accepted and H0 is rejected.

Table 3. Paired Samples T-Test Results

Pair	Mean Diff.	Std. Dev.	t	df	Sig. (2-tailed)
Pretest–Posttest	-33.654	10.170	-16.873	25	0.000

Based on the table above, the t-count value obtained was -16.873 with degrees of freedom (df) = 25 and a significance value Sig. (2-tailed) of 0.000. Because the Sig. (2-tailed) value < 0.05 (0.000 < 0.05), the null hypothesis (H0) is rejected and the alternative hypothesis (Ha) is accepted. This shows that there is a statistically significant difference between student learning outcomes before and after the use of AI-based Canva learning media. The mean difference

value of -33.654 indicates that the posttest scores of students were higher than the pretest scores, with an average increase of 33.65 points. Thus, it can be concluded that the use of AI-based Canva learning media is significantly effective in improving the learning outcomes of Islamic Cultural History for Grade X students at MAN Sidenreng Rappang.

N-Gain Analysis

Normalized Gain (N-Gain) testing was conducted to determine the level of effectiveness of applying AI-based Canva learning media in improving the learning outcomes of Islamic Cultural History (SKI). This analysis measures the magnitude of the increase in student scores from before (pretest) to after (posttest) the learning interaction was given.

Table 4. N-Gain Score/Percent Results

Variable	N	Min	Max	Mean	Category
N-Gain Score	26	0.40	0.89	0.6573	Medium
N-Gain Percent	26	40.00 %	88.89 %	65.73 %	Effective

Based on the table above, the N-Gain Score obtained showed a minimum value of 0.40 and a maximum value of 0.89, with a mean of 0.6573. Based on the N-Gain index classification criteria, the average value of 0.6573 is in the range of 0.30–0.70, which indicates that the increase in students' cognitive abilities is in the Medium category. In terms of effectiveness percentage (N-Gain Percent), the lowest student improvement score was at the level of 40.00% (fairly effective category) and the highest improvement reached 88.89% (very effective category). The average percentage of student learning outcome improvement overall reached 65.73%. Based on the N-Gain effectiveness interpretation criteria according to Sundayana (2014), which classifies the range of 56%–75% into the Effective category, it can be concluded that the use of AI-based Canva learning media has proven Effective in improving the learning outcomes of Islamic Cultural History for Grade X students at MAN Sidenreng Rappang.

In addition, the results of the student response questionnaire showed a very positive tendency across all observed indicators. The attainment of learning objectives (KKTP) obtained mean values between 0.88–0.92 (88%–92%), learning outcomes indicators between 0.81–0.92 (81%–92%), student engagement and discipline between 0.81–0.96 (81%–96%), and overall behavioral changes between 0.88–0.92 (88%–92%). These findings indicate that the application of AI-based Canva media not only contributes to improving academic learning outcomes but also supports student engagement, discipline, and positive behavioral development during the learning process.

Discussion

This study aimed to determine the effectiveness of utilizing AI-based Canva learning media on the learning outcomes of Islamic Cultural History for Grade X students at MAN Sidenreng Rappang. The processing and analysis of research data were carried out with the assistance of the SPSS application, with 26 Class X.A students as the research subjects.

During the implementation of learning, students showed better attention when the material was delivered through AI-based Canva media compared to the use of textbooks or lecture methods. The visual and dynamic presentation of the material helped students understand the information provided so that they could complete the learning questions or assignments within the allotted time. The use of AI-based Canva also helped streamline time in the learning process. Material could be delivered more concisely and structured so that it made it easier for students to receive and understand the learning. In addition, previous material could be linked to the material to be studied more dynamically through the presentation available on the AI-based Canva learning media.

These findings are consistent with the Multimedia Learning Theory proposed by Mayer (2002), which states that students learn more effectively when information is presented through a combination of text and visuals designed according to cognitive principles. The results of this study are also in line with previous research by Darwis et al. (2024) and Halimah et al. (2024), which showed that the use of Canva-based learning media had a positive effect on student learning outcomes and was able to increase conceptual understanding and create a pleasant learning atmosphere. Furthermore, the significant improvement found in this study

supports the conclusions of Zawacki-Richter et al. (2019) and Zhang et al. (2025) regarding the potential of AI in enhancing learning effectiveness when integrated pedagogically.

The significant increase in average scores from 48.65 to 82.31, the significant paired t-test results (Sig. = 0.000), and the N-Gain percentage of 65.73% (Effective category) collectively provide strong empirical evidence that AI-based Canva learning media is effective in improving the learning outcomes of Islamic Cultural History. Beyond cognitive gains, the positive student responses across engagement, discipline, and behavioral indicators suggest that the media also contributes to creating a more interactive, conducive, and character-supporting learning environment.

Conclusion

The results of hypothesis testing proved that there was a significant difference in student learning outcomes before and after the use of AI-based Canva learning media, with a mean difference of 33.65 points and a Sig. (2-tailed) value of 0.000 < 0.05. The average N-Gain of 65.73% falls into the Effective category. In addition, student responses showed a very positive tendency across all observed indicators related to the attainment of learning objectives, learning outcomes, engagement and discipline, and overall behavioral changes. Based on these results, it can be concluded that the use of AI-based Canva learning media is effective in improving the learning outcomes of Islamic Cultural History for Grade X students at MAN Sidenreng Rappang. Thus, AI-based Canva can be used as one of the technology-based learning media options in supporting the implementation of Islamic Cultural History learning at the Madrasah Aliyah level.

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