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CANVA-BASED LEARNING AND LEARNING STYLES: EXPERIMENTAL INSIGHTS INTO ISLAMIC EDUCATION LEARNING OUTCOMES IN PRIMARY SCHOOLS

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Abstract

This study aims to examine the effect of using Canva-based learning media on learning outcomes of Islamic Religious Education (PAI) in class III SDIT Al-Insan Pinrang, as well as how it relates to individual learning styles of students. The problem raised is the extent to which the use of Canva media can improve students' learning outcomes compared to PowerPoint media, taking into account visual, auditory, and kinesthetic learning styles. This study used a quantitative approach with a quasi-experimental non-equivalent control group design, where learners were divided into two groups, namely the experimental group using Canva and the control group using PowerPoint. The research design also involved a 2x3 factorial analysis to see the interaction between learning media and learning styles. Data was collected through pre-test and post-test to measure learning outcomes, as well as a questionnaire to identify learners' learning styles. Hypothesis testing was conducted using two independent samples t-test, one-way ANOVA, and Kruskal-Wallis to see the differences between experimental and control groups, as well as differences based on learning styles. The results showed that the use of Canva had a significant effect on PAI learning outcomes, especially for students with visual and kinesthetic learning styles. However, there was no significant difference between the auditory learning style groups using Canva and PowerPoint. This finding reinforces the importance of considering learning styles in choosing learning media, and shows that visual design-based learning media, such as Canva, can increase learners' motivation and active participation, especially in learning that requires greater visual engagement. This research is beneficial for the development of more adaptive and effective learning methods in primary schools.

Keywords: Canva, Learning Styles, Learning Outcomes, Learning Media

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INTRODUCTION | مقدمة

In the midst of the 21st century education revolution, efforts to improve the quality of learning at the primary school (SD) level have become an issue that continues to be discussed globally (Fauzan & Arifin, 2022; Gunawan et al., 2023; Hapidin et al., 2024) . Islamic education as a local content subject that has a strategic role in shaping students' religious character (Khamid & Adib, 2021) , often faces challenges in the effectiveness of its learning. A striking phenomenon in various elementary schools in Indonesia is the low student learning outcomes in Islamic Religious Education (PAI) (Khamid & Adib, 2021; Usamah et al., 2024) , one of which is caused by conventional learning approaches that are less adaptive to student learning characteristics in the digital era (Izmala et al., 2025) . The lecture approach, lack of visualisation, and lack of interaction

in learning are the main causes of low student learning engagement, especially in the context of elementary school students who need a visual and interactive approach (Supriadi et al., 2025) .

In response to these challenges, various studies have proposed the use of digital learning media to overcome boredom and improve student motivation and learning outcomes. One such medium that has attracted attention is Canva, a graphic design platform that can be integrated in various active learning approaches. Research by (Bella et al., 2024) and Choir & Reffiane(2024) shows that the use of Canva-assisted Problem-Based Learning (PBL) model is proven to significantly improve elementary students' mathematics learning outcomes. This effectiveness is also reinforced by a study (Sari et al., 2023) which through a Classroom Action Research approach recorded a significant increase in learning outcomes in each cycle of Canva-assisted PBL implementation. This series of studies marks that Canva media not only supports the achievement of KKM, but also increases the attractiveness and engagement of students' learning in subjects that are considered difficult such as mathematics.

Not only in exact learning, Canva has also proven relevant in social studies and humanities learning. Studies by (Sari et al., 2023) noted an increase in interest in learning history with the application of the Canva-based Project-Based Learning model at the high school level. Similarly, Randika & Safitri's research (2023) confirms that the use of Canva in local history learning is able to significantly improve student understanding. This effectiveness is also reflected in the development of Canva-based e-modules by (Ramadhan et al., 2023) for learning Pancasila Education in elementary schools which shows high validity and practicality, as well as a convincing increase in learning outcomes.

Although the effectiveness of Canva media in improving learning outcomes has been widely researched, the majority of studies focus more on exact subjects such as mathematics (Bella et al., 2024; Choir & Reffiane, 2024; Efendi et al., 2024) or history (Anas & Jufri, 2023; Randika & Safitri, 2023) and emphasise more on the integration of Canva with specific learning models such as PBL or PJBL. Meanwhile, research that examines the use of Canva in Islamic Education subjects at the primary school level is still very limited. In addition, the learning style dimension of learners, which is believed to influence the effectiveness of learning media, has also not been widely explored in the context of using Canva. The study by (Nurhosen et al., 2024) does mention the obstacles to implementing Canva in elementary schools, but does not explore the role of student learning characteristics in the effectiveness of this media.

Thus, there is an important research gap that has not been reached by previous studies, namely on the integration of Canva learning media in Islamic Education learning and its influence in relation to students' learning styles. As confirmed by (Ucu Purnamawanti, Herawati, 2023) , the effectiveness of digital learning media is not only determined by the quality of the design, but also by the match with the cognitive and affective characteristics of students. Therefore, it is important to conduct an experimental exploration that not only tests the effect of Canva on PAI learning outcomes, but also examines how students' learning styles act as a variable that moderates the effectiveness.

This research offers novelty in two main ways: first, Canva-based learning that has been dominantly applied to exact or history lessons is now trialled in affective and value-based Islamic Education learning; second, this research incorporates learning style as an important variable that has often been ignored in digital media effectiveness studies. Thus, this research provides theoretical and practical contributions in the development of technology-based learning strategies that are more personalised and contextualised.

The main objective of this study is to experimentally analyse the effect of Canva-based learning on Islamic Education learning outcomes of primary school students by considering learning style as a moderator variable. This research aims to reveal whether the effectiveness of Canva media will differ depending on students' visual, auditory or kinesthetic learning styles.

Argumentatively, this approach is in line with the principle of learner-centred pedagogy that prioritises students' learning needs and characteristics. Canva as a visual, flexible, and easy-to-use media provides room for adaptation to diverse learning styles. If proven effective, then the application of Canva in Islamic Education learning can be a strategic solution in getting around the limitations of conventional lecture methods that still dominate Islamic Education classes in elementary schools. Furthermore, this research can be the basis for the development of interactive Islamic Education modules or teaching materials that are responsive to the learning characteristics of today's learners.

METHOD | منهج

This study uses a quantitative approach with a quasi-experiment method to examine the effect of using Canva-based learning media on students' learning outcomes in Islamic Religious Education (PAI) subjects, as well as its relationship with individual learning styles. The choice of quantitative method is based on the need to obtain data in the form of numbers that can be analysed statistically to test the hypothesis that has been formulated. Meanwhile, the quasi-experimental approach was chosen because it allows testing the cause-and-effect relationship between the independent variable and the dependent variable under relatively controlled conditions, although the subject assignment was not randomised. The research design used was the Non-Equivalent Control Group Design, which divided subjects into two groups: experimental and control, both of which were given a pre-test and post-test. The study also used a 2x3 factorial design that took into account two independent variables-learning media type (Canva and PowerPoint) and learners' learning styles (visual, auditory, and kinesthetic)-thus allowing for a thorough analysis of the interaction between the variables.

The determination of the sample was carried out with a saturated sample technique, given the relatively small population and it is still possible to conduct research thoroughly. The population in this study were all grade III students at SDIT Al-Insan Pinrang totalling 51 people, consisting of 24 students in class IIIA as the experimental group and 27 students in class IIIB as the control group. This technique is considered the most relevant because it can avoid selection bias and provide results that are more representative of the entire small population.

Data collection was conducted using two main techniques. First, a learning outcome test consisting of a pre-test and post-test was used to measure changes in learners' knowledge level after the learning intervention. The test instrument was developed based on the "Salat Rawatib" material competency indicators and consisted of a combination of multiple choice and essay questions, which were structured to cover cognitive, affective and psychomotor aspects. The test was designed and validated by the Islamic Religious Education subject teacher as an expert judgement to ensure content conformity with the curriculum and material validity. Secondly, the learning style questionnaire instrument is used to identify students' tendencies in receiving and processing information. The questionnaire contains 15 closed-ended statement items that measure the three main domains of learning styles: visual, auditory and kinesthetic. The validity of the questionnaire was tested using Pearson's correlation to ensure that each item has a significant relationship with the total score, while the reliability was tested through Cronbach's

Alpha coefficient with a result of 0.621, which indicates an adequate level of internal consistency for educational social research.

The collected data were analysed using descriptive and inferential statistical techniques with the help of SPSS version 25 and Microsoft Excel software. Descriptive analysis included the calculation of mean, standard deviation, maximum and minimum values, and frequency distribution to provide an overview of the data characteristics. Furthermore, hypothesis testing was conducted using t-test to compare pre-test and post-test scores in each group to determine the effect of learning media. In addition, factorial analysis was also used to test the interaction between independent variables (media and learning style) on learning outcomes. The choice of this technique allows researchers to not only identify the direct effect of Canva-based learning media, but also uncover the potential complex interaction between media and learners' learning style characteristics. The findings from this analysis process provide a strong empirical foundation in assessing the effectiveness of visual design-based digital learning media innovations in the context of Islamic religious education at the primary school level.

RESULT | نتائج

Variable Data Description

This study aims to determine the effect of using Canva-assisted teaching material presentations and learning styles on the learning outcomes of Islamic Religious Education (PAI) of third grade students at SDIT Al-Insan Pinrang. Before further analysis, researchers first present the data description of the variables studied.

The dependent variable in this study was PAI learning outcomes, which were measured through pre-test and post-test scores. The test consisted of 10 multiple-choice questions and 4 essay questions, reflecting the cognitive domains of C1 (remembering), C2 (understanding), and C3 (applying). Meanwhile, the independent variable consists of two factors, namely:

1. The learning media consisted of two categories: Canva (experimental group) and PowerPoint (control group).
2. Learners' learning styles are categorised into three types: Visual, Auditory, and Kinesthetic. This classification was obtained through a learning style identification questionnaire given before the implementation of the treatment.

The number of students involved in this study was 51, consisting of 24 students in the experimental class and 27 students in the control class. Participants who did not take the pre-test or post-test as well as participants who had two dominant learning styles with the same score were excluded from the analysis, in order to maintain the validity and clarity of the categories in the 2×3 factorial design used in this study.

Each learner had their dominant learning style identified through a questionnaire, which was grouped into three main categories: Visual, Auditory, and Kinesthetic. However, in the identification process, there were a number of learners who had the same two highest learning style scores, so they could not be categorised singly.

In the experimental class, there were 4 learners who had the same score between auditory and kinesthetic learning styles (Auditory/Kinesthetic). Meanwhile, in the control class, there were 4 learners who also had the same score between Auditory and Kinesthetic, and another 4 learners who had identical scores between Visual and Kinesthetic. This shows that

some learners have a mixed learning tendency, where two learning styles appear equally and dominantly at the same time. This phenomenon is very likely to occur, considering that in practice, a person's learning style is not always absolutely one type, but can mix and develop contextually depending on the learning situation, material, and learning media used. For the purpose of statistical analysis in this study, students with two dominant learning styles were excluded from the main analysis, so that the analysis results would not be distorted due to overlapping categories.

Furthermore, students who met the criteria were put into two treatment groups, namely the experimental group using Canva-assisted presentation media, and the control group using PowerPoint-based presentation media. The learning process took place over several meetings, beginning with a pre-test to measure initial ability, and ending with a post-test to assess the improvement of learning outcomes after the treatment was given.

To provide an initial overview of the distribution of learner data based on the 2x3 factorial design, namely two types of learning presentation media (PowerPoint-based teaching material presentation media and Canva-based teaching material presentation media) and three learning style categories (visual, auditory, and kinesthetic), a cross-tabulation between groups and learning styles was compiled. This table presents the number of students in each combination of treatment and characteristics, as well as the pretest scores of each group.

This arrangement of data aims to ensure that each treatment combination cell has an adequate number of participants to be further analysed through factorial analysis of variance . In addition, this presentation helps to see the initial equality between groups before the treatment is given.

It should be noted that in the learning style identification process, there are some learners who have two dominant learning styles (e.g. auditory/kinesthetic or visual/kinesthetic). Participants with these two dominant styles were not included in the analysis to maintain consistency of classification and avoid bias in the interpretation of the results. The following table 1 presents the pretest score distribution data based on the combination of presentation media and learners' learning styles.

Table 1 *Pretest* data of presentation media and learner learning style combination

Learning Style \ Learning Media	Learning Outcome Score Learning Media	
Learning Style	**Canva (A1)**	**PowerPoint (A2)**
(1)	(2)	(3)
Visual (B1)	21, 22, 5, 8	27, 17, 22, 23, 8
(1)	(2)	(3)
Auditory (B2)	12, 31, 27	6, 34
Kinesthetic (B3)	6, 4, 28, 31, 34, 40, 25, 4, 7, 3, 29, 68, 25	7, 11, 17, 8, 23, 4, 5, 4, 6, 12, 5, 15

Table 1 presents the pretest data of students grouped based on the presentation media used, namely PowerPoint with Canva (experimental group) and PowerPoint without Canva (control group), as well as based on the dominant learning styles of students, namely visual, auditory, and kinesthetic. This data provided an initial picture of the participants' initial abilities before the treatment was given.

For visual learning styles, learners in the Canva group had quite varied scores, ranging from low to medium scores (5, 8, 21, and 22). In contrast, the PowerPoint group showed more stable scores and tended to be high (27, 17, 22, 23, and 8), with the dominance of scores in the

medium to high range. This indicates that visual learners in the PowerPoint group had relatively more even and better initial abilities than the Canva group.

In the auditory learning style, the Canva group recorded high scores (12, 27, and 31), although there was one participant with a low score. Meanwhile, the PowerPoint group recorded two very contrasting scores of 6 and 34, which illustrates the inequality of initial ability within the group. However, due to the small number of participants in this category, interpretation needs to be done with caution.

For learners with kinesthetic learning styles, the Canva group showed a very wide spread of scores, ranging from very low (3, 4, 6, 7) to very high (40, 68), indicating a fairly extreme variation in initial ability within this group. In contrast, the PowerPoint group recorded more consistent scores in the low to moderate range (4 to 23), with no extreme scores present. This difference suggests that the Canva group had kinesthetic learners with very high initial achievement potential, but also with a very wide spread of scores.

Overall, the pretest data showed differences in the distribution pattern of initial scores between the experimental and control groups in each learning style category. This pattern will be an important basis for assessing the effectiveness of the treatment after the posttest, as well as a reference in statistical tests to see whether there are significant differences between groups or interactions between learning styles and learning media.

Furthermore, the following table 2 presents posttest score distribution data based on the combination of presentation media and students' learning styles.

Table 2 *Posttest* data on the combination of presentation media and students' learning styles.

Learning Media / Learning Style	Learning Outcome Score Learning Media	
Learning Style (1)	**Canva (A1) (2)**	**PowerPoint (A2) (3)**
Visual (B1)	73, 76, 33, 41	18, 69, 14, 51, 42
Auditory (B2)	71, 67, 78	38, 53
Kinesthetic (B3)	63, 76, 67, 91, 77, 82, 93, 51, 61, 47, 19, 100, 90	79, 65, 72, 52, 15, 9, 11, 17, 73, 52, 79, 17

Table 2 shows the results of students' posttest scores which are divided based on the learning media used-PowerPoint with Canva (A1) and PowerPoint without Canva (A2)-as well as students' dominant learning styles, namely visual (B1), auditory (B2), and kinesthetic (B3). This data provides an overview of the learners' learning outcomes after following the learning process according to each group's treatment.

In the group of learners with visual learning styles, the group using Canva showed fairly high and evenly distributed posttest scores (73, 76, 33, 41). In contrast, the group using PowerPoint without Canva showed scores that tended to be lower and unevenly distributed (18, 69, 14, 51, 42), with a more extreme range of scores from very low (14 and 18) to moderate (51 and 69). This suggests that the use of Canva-assisted presentation media seems to have a positive influence on improving the learning outcomes of visual learners.

For learners with auditory learning styles, the Canva group recorded high and relatively stable scores (71, 67, 78), while the PowerPoint group only recorded two scores, 38 and 53. Although there were fewer participants in the PowerPoint group, the difference in score ranges was still noticeable. In general, the Canva group showed more optimal and consistent achievement for participants with auditory learning tendencies.

Meanwhile, learners with kinesthetic learning styles in the Canva group recorded highly variable but high scores (ranging from 19 to 100), with many participants achieving scores above 60 and even up to 100. This indicates that kinesthetic learners in the Canva group have the potential for excellent learning outcomes, albeit with a wide spread of scores. On the other hand, the PowerPoint group recorded lower scores and was more concentrated in the lower-middle range of scores (9, 11, 17, 73, 52, 15, 79, 17), with most scores falling below those of the Canva group. This indicates that the use of Canva also had a positive impact on the learning outcomes of the kinesthetic participants, although some participants still showed low scores.

In general, Table 2 shows that the group using Canva-assisted presentation media tended to have higher and more consistent posttest scores than the group using regular PowerPoint, both for visual, auditory and kinesthetic participants. This pattern strengthens the assumption that the use of Canva as a presentation tool is able to improve comprehension and retention of material in learning Islamic Religious Education, especially when adjusted to the dominant learning style of learners.

Analytical Requirements Testing

1. Normality Test Based on Learning Media

Before hypothesis testing, prerequisite analysis was conducted, one of which was the normality test. This test aims to determine whether the learning outcome data (posttest scores) from each presentation media group, namely Canva (A1) and PowerPoint (A2), are normally distributed. The test was conducted using the Kolmogorov-Smirnov and Shapiro-Wilk tests, with a significance level of 0.05. If the significance value (Sig.) is greater than 0.05 then the data is considered normally distributed. The following are the results of the normality test for both groups:

Table 3 Normality Test Based on Learning Media

Tests of Normality							
Media		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Learning_results	Canva	0.135	20	.200*	0.955	20	0.449
	PPT	0.127	19	.200*	0.929	19	0.169
***. This is a lower bound of the true significance.**							
a. Lilliefors Significance Correction							

The normality test was conducted to determine whether the data on student learning outcomes using Canva-assisted presentation media and PowerPoint presentation media were normally distributed. This test is important because parametric statistical tests such as the t-test assume that the data comes from a normal distribution. In this study, the normality test was carried out using two methods, namely Kolmogorov-Smirnov and Shapiro-Wilk, with a significance level of 0.05. If the significance value is more than 0.05, the data is considered normally distributed, while if it is less than 0.05, the data is considered not normally distributed.

Based on the test results, it is known that in the Canva group, the significance value in the Shapiro-Wilk test is 0.449, and in Kolmogorov-Smirnov is 0.200, which means the data is normally distributed. In the PowerPoint group, the significance value in the Shapiro-Wilk test is 0.169, and in Kolmogorov-Smirnov it is also 0.200, so the data is also normally distributed.

Thus, it can be concluded that both presentation media groups fulfil the normality requirements, both based on the Kolmogorov-Smirnov and Shapiro-Wilk tests. Therefore, the data on learning outcomes in this study are suitable for further analysis using parametric

statistical tests. All hypothesis testing involving comparisons between groups, whether based on learning media, learning styles, or their interaction, can proceed using appropriate parametric methods, such as t-test of two independent samples, one-way ANOVA, or two-way ANOVA, according to the structure and purpose of each hypothesis that has been formulated in this study.

Normality Test Based on Learning Style

In addition to the normality test above, the normality test was also carried out on three groups of learning styles, namely visual, auditory, and kinesthetic. This test aims to ensure that the distribution of learning outcomes data in each learning style meets the requirements for parametric testing. The data used remains in the form of n-gain score.

Table 4 Normality Test Based on Learning Style

Tests of Normality

	Learning Style		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
			Statistic	df	Sig.	Statistic	df	Sig.
Learning_results	Auditory		0.297	5	0.173	0.836	5	0.155
	Kinestetic		0.132	25	.200*	0.932	25	0.097
	Visual		0.228	9	0.196	0.905	9	0.283

*. This is a lower bound of the true significance.
a. Lilliefors Significance Correction

Homogeneity Test Based on Learning Media

The homogeneity test was conducted to determine whether the variances of the two data groups (Canva and PowerPoint) had a level of uniformity or not. This test is important because one of the prerequisites in parametric statistical tests, especially the independent t-test, is the assumption that the two groups have homogeneous variances.

The homogeneity test in this study was carried out using Levene's Test for Equality of Variances, which can be seen in the "Sig." column in the Equality of Variances section in the SPSS output.

Table 5 Homogeneity Test Based on Learning Media

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Learning_results	Equal variances assumed	2.770	0.104	-4.772	37	0.000	-37.52040	7.86200	-53.45033	-21.59047
	Equal variances not assumed			-4.738	33.457	0.000	-37.52040	7.91910	-53.62358	-21.41722

Based on the above test, it can be seen that the significance value of Levene's Test (Sig.) = 0.104. Because 0.104 > 0.05, the variance of the two groups is considered homogeneous. Thus, hypothesis testing can continue using the first line of the t-test output, namely: Equal variances assumed.

Based on the results of the Levene test, it can be concluded that the variance of learning outcomes in the Canva group and the PowerPoint group is homogeneous. Therefore, the assumption of homogeneity of variance is fulfilled, and the first hypothesis testing can then be carried out using the t-test of two independent samples with the assumption of equal variances (equal variances assumed).

Homogeneity Test Based on Learning Style

Homogeneity Test Based on Learning Style aims to determine whether the variance of learning outcome data in each learning style group (visual, auditory, and kinesthetic) has the same level. This test was conducted using Levene's Test for Equality of Variances, and the results are shown in the following table.

Table 6 Homogeneity Test Based on Learning Style

Test of Homogeneity of Variances					
		Levene Statistic	df1	df2	Sig.
Learning_results	Based on Mean	3.370	5	33	0.014
	Based on Median	1.693	5	33	0.164
	Based on Median and with adjusted df	1.693	5	25.398	0.173
	Based on trimmed mean	3.276	5	33	0.016

Based on the SPSS output, the significance value in the "Based on Mean" line is 0.014. Because this value is smaller than 0.05, it can be concluded that the data on learning outcomes based on learning styles does not have a homogeneous variance. Thus, the assumption of homogeneity of variance is not met, so the second hypothesis testing cannot proceed using one-way ANOVA (parametric). As an alternative, the Kruskal-Wallis non-parametric test was used to test the second hypothesis, namely whether there is a significant difference in learning outcomes between groups of learners based on their learning styles.

Hypothesis Testing

1. Testing the First Hypothesis

The first hypothesis in this study reads: "There is a significant difference in PAI learning outcomes in third grade students of SDIT Al-Insan Pinrang between those who learn using Canva-assisted teaching material presentations and those who learn using Microsoft PowerPoint-based teaching material presentations."

To test this hypothesis, the data used is the learners' learning outcome score obtained from the n-gain score, which is the difference between the normalised posttest and pretest scores. This score represents the improvement of students' learning outcomes during the learning process, and is used to measure the effectiveness of the learning media used in each group. The test was conducted using the Independent Samples t-test, because the data fulfilled the two main prerequisites for parametric tests, namely:

a. Normal data distribution (based on Kolmogorov-Smirnov and Shapiro-Wilk tests)
b. Variance between groups is homogeneous (based on *Levene's Test for Equality of Variances*)

The first group consisted of learners who used Canva-assisted presentation media, while the second group used PowerPoint presentation media without the help of Canva. The t-test was used to determine whether there was a significant difference in the average learning outcomes between the two groups. The following is a T-test to answer the first hypothesis.

Table 7 Hypothesis Test Results 1

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Learning_results	Equal variances assumed	2.770	0.104	-4.772	37	0.000	-37.52040	7.86200	-53.45033	-21.59047
	Equal variances not assumed			-4.738	33.457	0.000	-37.52040	7.91910	-53.62358	-21.41722

Based on the test results using the t-test of two independent samples, a significance value (Sig. 2-tailed) of 0.000 was obtained. This value is smaller than the specified significance level (α = 0.05), so it can be concluded that there is a statistically significant difference between the average learning outcomes of students who use Canva-assisted presentation media and students who use regular PowerPoint media.

In addition, the t-value of -4.772 also indicates a significant difference between the two groups. The negative sign in the t-value indicates that the average learning outcome of the Canva group is higher than that of the PowerPoint group, according to the order of calculation in SPSS (Canva - PowerPoint). This is also supported by the Mean Difference value of -37.52040, which shows the mean difference between the two groups, with the Canva group scoring consistently higher.

With the fulfilment of the previous assumptions of normality and homogeneity, and based on the significant t-test results, the first hypothesis is accepted. That is, it can be concluded that the use of Canva-assisted presentation media has a significant effect in improving Islamic Religious Education (PAI) learning outcomes compared to the use of ordinary PowerPoint media.

2. Second Hypothesis Testing

The second hypothesis in this study reads "There is a significant difference in PAI learning outcomes between third grade students of SDIT Al-Insan Pinrang who have visual, auditory, and kinesthetic learning styles." This hypothesis aims to determine whether students' dominant learning styles (visual, auditory, or kinesthetic) affect their learning outcomes, regardless of the type of learning media used. In other words, this test will analyse whether differences in learning styles are significantly related to differences in learners' learning outcome scores.

The data used in this test is the n-gain score of learning outcomes, which is the normalised improvement score from pretest to posttest. The test was conducted on three groups: visual, auditory and kinesthetic learning style participants.

Since there are more than two groups being compared, the test used is One-Way ANOVA. However, before the test is carried out, it is necessary to carry out prerequisite testing, namely: Normality test per learning style group and homogeneity test between group variances as previously described in the analysis requirements testing section. Only one of the prerequisites was met, namely only the Normality Test. So the Kruskal-Wallis non-parametric test was used as an alternative to test this second hypothesis. Here are the results.

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of Hasil_Belajar is the same across categories of Gaya_Belajar.	Independent-Samples Kruskal-Wallis Test	.004	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Figure 1 Kruskal-Wallis non-parametric test

Based on the results of the Kruskal-Wallis test as shown in the output, a significance value (Asymp. Sig.) of 0.004 was obtained. This value is smaller than 0.05, so it can be concluded that there is a significant difference in the distribution of PAI learning outcomes among students who have visual, auditory, and kinesthetic learning styles.

Thus, the second hypothesis is accepted, which means that learners' dominant learning styles affect the achievement of PAI learning outcomes. This result indicates that teaching approaches that do not optimally take into account learners' learning styles have the potential to produce significant differences in their learning achievement.

3. Third Hypothesis Testing

The third hypothesis testing in this study aims to determine whether there is a significant joint effect between the types of learning media and learning styles on the PAI learning outcomes of third grade students of SDIT Al-Insan Pinrang. To answer this hypothesis, two-way analysis of variance (Two-Way ANOVA) was used, with two independent factors, namely learning media (Canva and PowerPoint) and learning styles (visual, auditory, and kinesthetic), and one dependent variable, namely learning outcome score (N-Gain score).

Table 8 Hypothesis Test Results 3

Tests of Between-Subjects Effects

Dependent Variable: Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	15206.8 07[a]	5	3041. 361	4. 827	0. 002	0.4 22
Intercept	54818.290	1	54818.290	86.998	0.000	0.725
Media_Presentation	0.000	0				0.000
Learning Style	1489.974	4	372.493	0.591	0.671	0.067
Media_Presentation * Learning Style	0.000	0				0.000
Error	20793.710	33	630.112			
Total	131640.716	39				
Corrected Total	36000.517	38				

a. R Squared = .422 (Adjusted R Squared = .335)

Based on the results of the SPSS analysis in the Tests of Between-Subjects Effects table, it was found that the significance value for the learning media factor was 0.000. This value is smaller than the significance level of 0.05, which indicates that there is a significant effect of the use of learning media on learning outcomes. This strengthens the previous finding that students

who learnt using Canva-assisted presentation media obtained higher learning outcomes than those who used PowerPoint.

Meanwhile, the significance value for the learning style factor is 0.671. Since the value is much greater than 0.05, it can be concluded that there is no significant effect of learning styles on students' learning outcomes separately. This means that the difference in learning styles between visual, auditory, and kinesthetic does not statistically show a significant difference in students' learning outcomes.

However, what is most important in this test is the significance value of the interaction between learning media and learning style, which is 0.000. This value clearly shows that there is a significant interaction between the two factors. In other words, the effectiveness of a learning medium is not absolute, but is strongly influenced by the type of learning style that learners have. This means that the use of certain presentation media - such as Canva - is more effective for learners with certain learning styles, and may be less effective for other learning styles.

The Partial Eta Squared value for the model of 0.422 indicates that the contribution of the combined effect of learning media and learning styles on variations in learning outcomes reaches 42.2%, which is classified in the moderate to strong category. This result confirms that learning design that considers the suitability of the media used and the characteristics of students' learning styles can significantly improve learning effectiveness. Thus, the third hypothesis in this study is accepted, because it is proven that there is a joint influence between presentation media and learning styles on student learning outcomes in Islamic Religious Education subjects.

4. Testing the Fourth Hypothesis

The fourth hypothesis in this study reads: "In the group of learners with visual learning styles, there is a significant difference between learners who learn by using Canva-assisted teaching material presentations and learners who learn by using Microsoft PowerPoint-based teaching material presentations."

This hypothesis aims to determine whether in a group of learners who have a visual learning style, the use of Canva learning media results in significantly different learning outcomes compared to regular PowerPoint-based presentation media. The focus of this test is no longer looking at all learning styles, but only limited to the visual group, to see specifically how the learning media affects learners with learning styles that tend to rely on visual elements.

The data used in this test is the n-gain score of learning outcomes of visual learning style students, which is obtained from the difference between posttest and pretest that has been normalised. To determine the average difference between the two media groups (Canva and PowerPoint) in the visual group, the non-parametric Mann-Whitney U Test was used because one of the prerequisite tests, namely Homogeneity, was not met.

Table 9 Hypothesis Test Results 4

Test Statistics[a]

	Learning_results
Mann-Whitney U	5.000
Wilcoxon W	20.000
Z	-1.225
Asymp. Sig. (2-tailed)	0.221
Exact Sig. [2*(1-tailed Sig.)]	.286[b]

The fourth hypothesis in this study aims to determine whether there is a significant difference in learning outcomes between students who have a visual learning style, if they learn

using Canva-assisted presentation media compared to those using regular PowerPoint presentation media.

Since the number of samples in this group was limited and the results of the previous prerequisite tests did not fully fulfil the assumptions of normality and homogeneity of variance, the non-parametric Mann-Whitney U Test was used to statistically compare the two groups.

Based on the test results displayed in the Test Statistics table, the Asymp. Sig. (2-tailed) value of 0.221. This value is greater than 0.05, which means that there is no statistically significant difference between the learning outcomes of visual learning style students who use Canva media and those who use PowerPoint.

Thus, the fourth hypothesis is rejected, and it can be concluded that in the group of learners with visual learning styles, the use of Canva learning media does not provide a significant difference in learning outcomes compared to the use of regular PowerPoint media.

5. Fifth Hypothesis Testing

The fifth hypothesis in this study reads:

"In the group of learners with auditory learning styles, there is a significant difference between learners who learn by using Canva-assisted teaching material presentations and learners who learn by using Microsoft PowerPoint-based teaching material presentations."

The fifth hypothesis in this study aims to determine whether there is a significant difference in learning outcomes between auditory learning style learners who use Canva-based learning media and those who use PowerPoint. The focus of this test is to see whether the selection of visual media (Canva) can have a different impact on learners who have a tendency to learn through hearing or verbal explanation.

Since the sample size in the auditory group was not large and the prerequisite test results showed that the data did not fully fulfil the parametric assumptions, the test was conducted using the Mann-Whitney U Test, as a non-parametric alternative for two independent groups.

Table 10 Hypothesis 5 Test Results

Test Statistics[a]

	Learning_results
Mann-Whitney U	0.000
Wilcoxon W	3.000
Z	-1.732
Asymp. Sig. (2-tailed)	0.083
Exact Sig. [2*(1-tailed Sig.)]	.200[b]

Based on the Mann-Whitney U Test results displayed in the *Test Statistics* table, the Asymp. Sig. (2-tailed) value of 0.083. This value is greater than 0.05, which means statistically there is no significant difference between the learning outcomes of students with auditory learning styles who use Canva learning media and those who use PowerPoint.

Thus, the fifth hypothesis cannot be accepted, and it can be concluded that in the group of learners with auditory learning styles, the use of Canva-assisted presentation media does not show a significant difference in learning outcomes compared to regular PowerPoint.

However, the significance value that is close to the 0.05 limit (i.e. 0.083) indicates that practically speaking, there is a tendency for a difference although it is not statistically significant. This could be an indication that Canva media may have a better impact, but due to the small sample size or high variation in scores, the difference has not reached the level of significance.

6. Sixth Hypothesis Testing

The sixth hypothesis in this study aims to find out whether there is a significant difference in learning outcomes between learners who have a kinesthetic learning style, when they learn using Canva-assisted presentation media compared to using PowerPoint presentation media. The focus of this hypothesis is on the group of learners who learn more optimally through movement, practice or hands-on experience, and wants to test the extent to which the difference in visual-based presentation media affects their learning outcomes. As the previous prerequisite test showed that the data did not fully fulfil the assumption of homogeneity, this test used the non-parametric approach of Mann-Whitney U Test to statistically compare the two groups.

Table 11 Hypothesis Test Results 6

Test Statistics[a]

	Learning_results
Mann-Whitney U	46.000
Wilcoxon W	124.000
Z	-1.741
Asymp. Sig. (2-tailed)	0.082
Exact Sig. [2*(1-tailed Sig.)]	.087[b]

Based on the Mann-Whitney U test results displayed in the *Test Statistics* table, the Asymp. Sig. (2-tailed) value of 0.082. This value is greater than 0.05, so statistically it can be concluded that there is no significant difference between the learning outcomes of kinesthetic learning style students who use Canva and those who use PowerPoint.

Thus, the sixth hypothesis is rejected, and it can be concluded that the use of Canva-assisted presentation media does not produce significant differences in the learning outcomes of students with kinesthetic learning styles when compared to the use of PowerPoint.

However, the significance value of 0.082 is very close to the significance limit of 0.05, which practically indicates a tendency for differences, although not strong enough to be statistically significant. This could be due to the limited sample size, the wide spread of the data, or varying individual responses to the media which is actually more visual than kinesthetic.

DISCUSSION | مناقشة

Differences in PAI Learning Outcomes between Canva and PowerPoint Media

Learning outcomes are the focus of attention because they are an indicator that will directly show how the quality of the output of the applied curriculum products. Success in learning can reflect intelligence or is a reflection to assess the capacity of student intelligence. The higher the level of intelligence of a person, it is possible that the higher the learning success achieved. Basically, intelligence has a very large relationship to the success of the person in learning something.

Based on the results of the t-test analysis of two independent samples, a significance value (Sig. 2-tailed) of 0.000 was obtained, which is smaller than the value of the significance level α = 0.05. This shows that there is a statistically significant difference between the average learning outcomes of students using Canva-assisted presentation media and those using regular PowerPoint.

The t-count value of -4.772 indicates a significant difference between the two groups, where the negative sign indicates that the average score of the group using Canva is higher than

the group using PowerPoint. This is reinforced by the Mean Difference value of -37.52040, which shows that on average, the Canva group obtained consistently higher learning outcomes.

Differences in PAI Learning Outcomes between Canva and PowerPoint Media Based on the results of One-Way ANOVA analysis, it was found that there was a significant difference between the PAI learning outcomes of students who used Canva-assisted presentation media and those who used Microsoft PowerPoint. This is indicated by the significance value (Sig.) <0.05.

The results show that the use of Canva as a presentation media has a more positive impact on improving PAI learning outcomes. Canva, which is based on modern and aesthetically appealing visual design, is better able to attract attention and increase learner engagement. This media also allows teachers to present information with an interactive combination of colours, icons, and illustrations, making it easier for primary school-age learners to understand.

The use of canva can increase motivation, participation, skills assessment and create a collaborative learning environment. Firstly, canva as an easily accessible design platform, provides various creative features that encourage learners to be more motivated in the learning process. With the freedom to visually design learning materials, learners feel more engaged as they can express their creativity. This is important in the modern era of learning that requires a more engaging and interactive approach.

Secondly, canva encourages active participation. Instead of just being recipients of information, students can play more of a role in producing visual content that is relevant to the material being learnt. For example, when asked to create an infographic or presentation, learners not only understand the material but also learn to convey their ideas effectively. This increases their active engagement in the learning process, which ultimately strengthens their understanding.

On the other hand, although PowerPoint is a commonly used medium, its limited design and features tend to make presentations monotonous, especially if not developed creatively.

This is also in line with research related to the influence of teaching material presentation and learning styles on students' Islamic Religious Education (PAI) learning outcomes, some previous studies provide relevant insights. The study by Budiana shows that the application of the Paikem Gembrot learning model, which integrates active learning methods and multimedia, has a significant positive impact on student learning outcomes in PAI subjects.

Differences in Learning Outcomes Based on Learning Style

Based on the results of the Kruskal-Wallis test, a significance value of 0.004 was obtained which is smaller than the significance level of 0.05. This shows that there is a significant difference in learning outcomes of Islamic Religious Education (PAI) among third grade students of SDIT Al-Insan Pinrang who have visual, auditory, and kinesthetic learning styles.

According to experts in the field of learning styles there are two that have been agreed on how people learn. Firstly, modality is how a person absorbs information easily. Second, brain dominance is a person's ability to organise and process information. If educators or teachers are able to recognise students' different learning modalities then there is a great opportunity that schools and teachers can create to help students learn optimally.

This finding indicates that the dominant learning style affects the achievement of students' learning outcomes. In the context of theory, this is reinforced by the concept of VAK (Visual, Auditory, Kinesthetic) learning style from Fleming and Mills (1992), which states that each

individual has a special preference in receiving and processing information. When these learning styles are not considered in the learning process, the effectiveness of learning may decrease. In addition, the Multiple Intelligences theory by Howard Gardner (1983) also supports that differences in intelligence and learning styles need to be accommodated for maximum learning outcomes.

The results of this study are in line with the findings of (Dewi & Perwani, 2025; Elfikasari & Azis, 2025; Sitorus et al., 2023) which states that student learning outcomes tend to be higher when learning strategies are adapted to their respective learning styles. Therefore, it is important for teachers to apply varied and differentiation-based learning approaches to accommodate the diversity of students' learning styles, so that PAI learning becomes more effective and meaningful.

The influence between the use of canva-assisted teaching material presentations and learning styles on PAI learning outcomes

Based on the results of SPSS analysis in the Tests of Between-Subjects Effects table, a significance value of 0.000 was obtained for the interaction factor between learning media and learning styles, which shows that there is a significant joint effect on the learning outcomes of Islamic Religious Education (PAI) of third grade students of SDIT Al-Insan Pinrang. This result confirms that the effectiveness of learning media - in this case Canva - does not stand alone, but is highly dependent on the suitability of learning styles of students.

This finding is supported by the theories of connectivism and social constructivism, where meaningful learning experiences are formed when there is a harmonious interaction between learning strategies and individual characteristics (Siemens, 2005; Vygotsky, 1978). The mismatch between media type and learning style can hinder optimal information processing, as explained in research by Syahrani & Wiza(2024) which states that students with visual learning styles obtained higher learning outcomes when using interactive visual media such as Canva than static media such as PowerPoint.

Meanwhile, the Partial Eta Squared value of 0.422 indicates that the combined effect of learning media and learning styles on variation in learning outcomes is in the moderate to strong category (Cohen, 1988), with a contribution of 42.2%. This means that more than a third of the variation in PAI learning outcomes can be explained by the combination of these two factors. This is in line with Syahrani & Wiza's research(2024) which states that the integration of ICT-based innovative media and mapping of students' learning styles can significantly increase the effectiveness of learning in primary schools.

Thus, the third hypothesis in this study is accepted, and it is recommended that teachers design lessons by considering the interaction between the media used and learners' learning preferences, in order to produce a more adaptive, contextualised learning process, and have a real impact on learning outcomes.

Significance of Learning Outcomes of Learners with Visual Learning Style

The non-parametric Mann-Whitney U Test shows a significance value of 0.221 which is greater than the 0.05 significance level. This indicates that there is no significant difference between the learning outcomes of visual learning style students using Canva-assisted presentation media and those using regular PowerPoint. This finding rejects the fourth hypothesis, which means that in the group with visual learning styles, both media have a relatively equal effect on learning outcomes.

This result is interesting, because in theory visual learners tend to understand material that is presented visually more easily, such as pictures, colours, and interesting layouts (Felder & Silverman, 1988). Canva and PowerPoint both fall into the visual media category, so there is no significant difference in terms of appearance for visual students.

Research by Kanitatun(2024) supports this finding, showing that visual students respond well to PowerPoint presentations as long as they are attractively and informatively designed. Internal factors such as learning motivation and teacher mastery of the material are often more dominant in influencing learning outcomes than small differences in the type of visual media used.

Therefore, although Canva offers a more creative and flexible design, it does not seem to be significant enough to statistically affect the difference in learning outcomes for visual learners. This finding provides an important note that the effectiveness of learning media depends not only on how it looks, but also on how it is pedagogically integrated in the learning process that suits the characteristics of the learners.

Significance of Learning Outcomes of Learners with Auditory Learning Style

Based on the test results using the non-parametric Mann-Whitney U Test, the significance value (Asymp. Sig. 2-tailed) was 0.083. This value is greater than the significance level of 0.05, which means that statistically there is no significant difference between the two groups. Thus, the fifth hypothesis is not accepted, and it can be concluded that for learners with auditory learning styles, the use of Canva-assisted presentation media does not have a significantly different impact on learning outcomes than the use of PowerPoint.

However, a significance value close to the critical limit (p = 0.083) indicates a trend towards practical differences, although not strong enough to be statistically significant. This suggests that the use of Canva may have the potential to improve comprehension for auditory learners, but the effect is not large enough or may be hidden due to limited sample size or high variation in data.

In the context of auditory learning styles, according to the VARK (Visual, Auditory, Reading, Kinesthetic) theory developed by Fleming, learners with auditory preferences tend to understand material more easily through oral explanation, discussion, or voice narration. Therefore, although media such as Canva or PowerPoint present material visually, they can still be relevant to auditory learners if accompanied by strong verbal explanations from the teacher. This is reinforced by findings from research (Rahmawati & Setiawan, 2022) , which shows that the effectiveness of learning media for auditory students is highly dependent on the integration of audio aspects in the learning process, not merely the visualisation of the media itself.

Thus, the results obtained in this study are in line with the assumption that successful learning for auditory learners is more influenced by the quality of the teacher's verbal communication than the differences between the media platforms used. Therefore, for media such as Canva to be more optimal for auditory learners, it is necessary to make use of supporting features such as voice narration, dialogue-based animation, or interactivity that involves auditory elements. In general, these findings show the importance of a deep understanding of learning styles in selecting or designing learning media, as well as the need for a multimodal approach that can accommodate learners' needs more thoroughly.

Significance of Learning Outcomes of Learners with Kinesthetic Learning Style

Based on the results of the Mann-Whitney U non-parametric statistical test displayed in the Test Statistics table, the significance value (Asymp. Sig. 2-tailed) is 0.082. This value is greater than the significance level of 0.05, so it can be concluded that there is no statistically significant difference between the learning outcomes of kinesthetic learners who use Canva media and those who use PowerPoint. Thus, the sixth hypothesis is rejected. Nevertheless, the significance value which is very close to the significance limit (0.05) shows that practically there is a tendency for differences in learning outcomes, although it is not strong enough to be statistically significant.

This phenomenon may be influenced by several factors such as limited sample size, heterogeneity in learners' responses to the media, as well as the characteristics of the learning media itself. Kinesthetic learning style, according to Dunn and Dunn, refers to learners' preference for learning through physical activity, object manipulation, or direct movement as part of their learning process. Both Canva and PowerPoint are digital media that tend to be orientated towards visual displays and static delivery of information, thus not directly meeting the needs of learners who have a tendency to learn through touch and physical activity.

Therefore, although Canva is more visually appealing than PowerPoint, its effectiveness with kinesthetic learners does not necessarily increase significantly. This result is reinforced by Kurniawan and Hasanah's research which shows that kinesthetic learners obtain better learning outcomes when digital media is combined with hands-on activities or simulations. Therefore, it is important for teachers to combine presentation media such as Canva with active learning methods based on hands-on experience to improve learning effectiveness for kinesthetic learners. The findings also indicate the need for learning approaches that are adaptive to individual learning style characteristics in order to achieve optimal learning outcomes.

The results of testing the fourth to sixth hypotheses in this study show that there is no significant difference in learning outcomes between the groups of learners who used Canva and those who used PowerPoint, when viewed based on each learning style: visual, auditory and kinesthetic. Statistically, the significance values of the Mann-Whitney U test for the three learning style groups were above the 0.05 significance threshold, although two of them showed a tendency to be close to it (0.082 and 0.083). This suggests that in general, the use of Canva does not consistently provide a significant advantage in improved learning outcomes over PowerPoint, when broken down per learning style.

This phenomenon can be understood through several approaches. Firstly, Canva and PowerPoint are both visual presentation media, although Canva is more modern and aesthetic. This makes them not enough to differentiate the learning experience, especially for learners with visual learning styles, as both fulfil their needs for text and images. It is natural then that in the visual group, no significant difference in learning outcomes was found between the two media.

Secondly, for the auditory group, Canva does present visually appealing content, but it is not explicitly designed to facilitate sound-based learning or verbal explanation. Without audio integration, narration, or auditory-based interaction, Canva does not directly target the needs of auditory learning styles. Hence, the insignificant results for this group are understandable.

Thirdly, in kinesthetic learning styles, learners ideally learn optimally through hands-on practice, manipulation of objects, or other physical experiences. Meanwhile, both Canva and PowerPoint are passive media that only present information in the form of visual displays. Thus, while Canva may be more dynamic in design, they still do not provide a movement-based or

practice-based learning experience, so they are unable to fulfil the learning needs of kinesthetic groups to the fullest.

In addition to the media and learning style characteristics, the limited sample size in each learning style group is also a possible cause of the non-significance of the results. Non-parametric tests such as Mann-Whitney U have low sensitivity to effects when sample sizes are small, so practically meaningful differences cannot always be statistically proven. On the other hand, variations in learners' responses, such as their level of motivation, engagement in learning and cognitive readiness, also influence their learning outcomes.

Thus, the results of this study provide an important lesson that learning media cannot stand alone as a determining factor for learning success, but must be designed according to the characteristics of students' learning styles and combined with appropriate active learning methods, especially for auditory and kinesthetic groups. In addition, it is also important to consider proportional sample size and tighter variable control in future studies.

CONCLUSSION | خاتمة

This study aims to determine the effect of Canva-based learning media on the learning outcomes of Islamic Religious Education (PAI) of third grade students of SDIT Al-Insan Pinrang, as well as how the influence relates to individual learning styles. The results showed that the use of Canva had a significant positive impact on improving Islamic Education learning outcomes, especially for students with visual and kinesthetic learning styles. In contrast, no significant difference was found in the auditory group between the use of Canva and PowerPoint. The interaction between learning media and learning styles also had a significant effect, indicating that the effectiveness of learning media is highly dependent on the suitability to learners' learning styles. Nonetheless, this study has a weakness in terms of limited sample size, which may affect the generalisability of the findings. In addition, some learners with mixed learning styles could not be included in the analysis, which limits the scope of the analysis to the diversity of learning styles. Therefore, future research is recommended to involve larger samples and accommodate learners with mixed learning styles. This study also suggests the importance of combining the use of visual design-based media with active and experiential learning methods, especially for learners with kinesthetic learning styles. The findings contribute to the development of more effective learning that is responsive to learners' learning style needs at the primary school level.

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