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The Impact of Radec Method on Literacy Skills and Learning Outcomes of Elementary School Civics Education

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Abstract: This study is motivated by the low literacy skills and Civics (Civic Education) learning outcomes of elementary school students, which are caused by teacher-centered instruction and the limited optimal use of literacy-based strategies and digital media. The research gap arises from the lack of studies implementing strategies that integrate literacy with interactive media. This study aims to examine the effect of the RADEC (Read, Answer, Discuss, Explain, Create) strategy on the literacy skills and Civics learning outcomes of fifth-grade students at SDN Kepanjen 2. Employing a quantitative approach with a quasi-experimental non-equivalent control group design, the study involved an experimental class applying the RADEC strategy and a control class using an expository strategy supported by Canva. The instruments consisted of expert-validated literacy and learning outcome tests. Data were collected through pretests and posttests and analyzed using an Independent Samples *t*-test and Tests of Between-Subjects Effects with SPSS 27. The results revealed a significant difference between the two groups, with Sig. 0.000 < 0.05 for literacy and $t = 5.757$ ($p = 0.000$) for learning outcomes. These findings confirm that the RADEC strategy supported by Canva is effective in improving literacy skills and Civics learning outcomes and is recommended as a 21st-century learning strategy.

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Introduction

21st-century learning demands that students possess literacy, critical thinking, creativity, communication, and collaboration skills, particularly at the elementary school level, which lays the foundation for academic and social skills. Educational challenges are increasingly complex due to rapid technological developments and globalization, necessitating innovative learning strategies that foster active student engagement, including in the abstract and theoretical subject of Civics. Previous research has shown that integrating interactive technology can enrich students' learning experiences and support their understanding of difficult concepts (Xie et al., 2024; Zhang, 2024; Wang et al., 2025), especially when combined with collaborative and problem-solving methods (Li & Zhang, 2025; Su, 2024; Chen et al., 2025). One relevant strategy is RADEC (Read, Answer, Discuss, Explain, Create), which combines the activities of reading, answering, discussing, explaining, and creating learning products. When enriched with visual media such as Canva, the RADEC

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strategy can make it easier for students to understand information while improving creativity and communication skills (Zhao & Wu, 2024; Zhang et al., 2025; Liu & Sun, 2025).

Previous research confirms that RADEC can improve students' conceptual understanding and engagement (Li et al., 2024; Zhang & Liu, 2025), while Canva helps visualize abstract concepts in an engaging way (Chen & Zhang, 2024; Yang et al., 2025). However, there is still a research gap regarding the implementation of Canva-assisted RADEC in the context of Civics in elementary schools, particularly in understanding the contribution of each RADEC stage to improving literacy and learning outcomes, and how students with different literacy levels can gain maximum benefits (Zhang & Liu, 2025; Wang & Li, 2024; Su, 2024). Challenges also arise in the availability of technological infrastructure and teacher readiness, especially in schools with limited device access (Liu & Sun, 2025; Zhang et al., 2025; Li & Zhang, 2025). In addition, previous studies have not assessed the long-term impact of Canva use in improving civic literacy, which requires a deep understanding of values and social context (Yang et al., 2025; Xie & Li, 2025; Wang et al., 2025).

This study is significant because it simultaneously combines RADEC with Canva—an approach that has not been widely researched—to examine its impact on fifth-grade students' civics literacy skills and learning outcomes. Previous studies have been fragmented: some have examined only RADEC (Zhang et al., 2024; Su et al., 2024; Liu & Zhang, 2024), and others have examined only Canva (Wang & Li, 2025; Li & Zhang, 2025), thus failing to assess how the two components reinforce each other in civics learning. This study will fill this gap by focusing on the implementation of RADEC enhanced by Canva to support every stage of learning, from reading to creating digital products, thus hopefully improving literacy, digital literacy, and civic literacy simultaneously. The novelty of this study lies in the systematic integration of the RADEC (Read, Answer, Discuss, Explain, Create) learning strategy with Canva as a visual–digital learning medium in elementary Civic Education. Unlike previous studies that examined RADEC or Canva separately, this research investigates how each stage of RADEC is pedagogically reinforced through Canva-supported visual and creative activities, thereby enhancing students' civic literacy and learning outcomes simultaneously. Furthermore, this study contributes novel insights by applying this integrated approach in the context of Civic Education (PPKn), a subject that has traditionally relied on teacher-centered instruction and has rarely been explored through literacy-based digital learning strategies.

This research also has high social relevance, because Civics not only aims to improve academic learning outcomes, but also aims to shape students' character, critical thinking, and social awareness so that they become active and responsible citizens (Liu & Zhang, 2025; Zhang & Liu, 2024; Wang & Li, 2025). Thus, this research has the potential to provide theoretical and practical contributions for teachers, schools, and the world of education in designing innovative, meaningful, and character-building 21st-century learning through the integration of the RADEC strategy and Canva media in Civics learning in elementary schools..

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Research Method

This study aims to determine the effect of using the Canva-assisted RADEC Strategy and the Canva-assisted Expository Strategy on Literacy Skills and Civic Education Learning Outcomes in fifth-grade students. This type of research is a quasi-experiment, which is used to compare the effect of two types of learning strategies on literacy skills and student learning outcomes. This study does not use random group division, but utilizes existing class groups (experimental class and control class).

The research design used in this study was a non - equivalent control group design. This study compared two groups given different treatments: an experimental group using the Canva-assisted RADEC strategy and a control group using an expository strategy. The following figure shows a visualization of this research design.

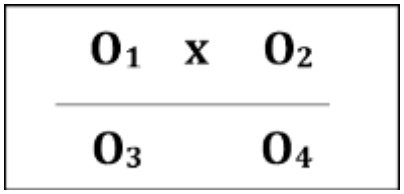

Figure 1. Non-Equivalent Control Group Design

Table 1Research Design

Group	Pre-Test (O1)	Treatment (X)	Post-Test (O2)
Experimental Group	O1	RADEC strategy assisted by Canva (X)	O2
Control Group	O3	Expository Strategy	O4

Information:
O1: Pre-test of the experimental group
O2: Post-test of the experimental group
O3: Pre-test control group
O4: Post-test of control group
X: Learning treatment using the RADEC strategy assisted by Canva for the experimental group
X2: Learning treatment using Canva-assisted Expository strategy for the control group.

This research procedure begins with an initial observation step to determine the condition of students before being given treatment. The researcher will conduct observations to get a general overview of the level of ability and understanding of students regarding Civic Education material before learning begins. After that, the researcher will determine the research subjects**,** by selecting students from grade V, who will be the objects of research in this study. The selection of students is based on suitability with the research objectives which want to determine the effect of learning strategies on their literacy skills and learning outcomes. Then, the researcher will give a pre-test (O1) to all students, which aims to measure their literacy skills and initial understanding of Civic Education material. This pre-test serves as a measuring tool to see the extent to which students have understood the material before being given the learning treatment.

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After the pre-test, the researcher will implement the learning treatment. The experimental group will be taught using the RADEC strategy assisted by Canva, which includes five steps: Read, Answer, Discuss, Explain, and Create, with the support of visual aids in the form of the Canva application to facilitate student understanding of the material. Meanwhile, the control group will use an expository strategy, which is a traditional learning method that focuses on delivering material systematically and structured by the teacher through verbal communication without using visual aids. After the learning treatment is completed, both groups will be given a post-test (O2), which aims to measure students' literacy skills and learning outcomes after following the learning process that has been implemented. This post-test is designed to determine changes that occur in students' abilities and understanding of Civic Education material after receiving different treatments.

Researchers will compare the results of the pre-test and post-test of both groups to analyze the effects of both learning strategies on students' literacy skills and learning outcomes. This comparison is expected to demonstrate the extent to which the Canva-assisted RADEC strategy is more effective than the Canva-assisted Expository strategy in improving student literacy and learning outcomes in Civics.

The subjects of the study were 121 fifth-grade students at SDN Kepanjen 2 in the 2025/2026 academic year. This study was conducted in Civics lessons, on fifth-grade students. There are four classes in fourth-grade, namely VA, VB, VC, and VD. The subjects were divided into. the number of samples selected was 121 students, which were divided into two groups, namely the experimental group and the control group. The population of this study consisted of 121 fifth-grade students at SDN Kepanjen 2 in the 2025/2026 academic year. However, the final sample analyzed comprised 100 students drawn from four classes (VA, VB, VC, and VD), with 25 students in each class. The remaining 21 students were excluded from the analysis due to incomplete participation in the research procedures, such as absence during the pretest or posttest. Therefore, all statistical analyses were conducted based on data from 100 students who met the completeness criteria, ensuring the validity and consistency of the findings.

Table 2. below shows the distribution of the population and samples taken in this study.

Table 2. Research Subjects

No	School name	Population	Class	Sample	Instructional Media
1	Kepanjen 2 Elementary School	Class V (A, B, C, D)	VA	25 Students	RADEC assisted by Canva
			VB	25 Students	
			VC	25 Students	Canva-assisted expository
			VD	25 Students	
		100	Amount	100 Students	-

In table 2 above, classes VA and VB are the experimental groups that will receive learning with the RADEC strategy assisted by Canva, while classes VC and VD are the control groups that will receive learning with the expository strategy.

The instruments used in this study aimed to collect data related to students' literacy skills and learning outcomes in Civics. Literacy skills were measured using a test, while learning outcomes were measured using a questionnaire. These instruments were designed to evaluate the extent to which two learning strategies the Canva-assisted RADEC strategy and

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the expository strategy influenced students' literacy skills and learning outcomes. The following details the instruments used in this study.

Table 3. Research Measurement Instruments

Variables	Data Collected	Data collection technique	Instrument	Indicator
Students' Literacy Skills in Civic Education Material	Students' literacy skills before and after receiving treatment as measured by test scores	Civics Literacy Test	Literacy Pretest and Posttest Grid and Questions	1. Ability to Read Civics Texts 2. Understanding Citizenship Texts 3. Ability to compose text correctly 4. Analysis and Synthesis of Information from Civics Texts 5. Appropriate Use of Language in the Context of Citizenship Education
Civic Education Learning Outcomes	Level of understanding and achievement of learning outcomes after receiving treatment with questionnaire scores	Citizenship Education Learning Outcomes Questionnaire	Learning Outcomes Questionnaire	1. Understanding the Basic Concepts of Civic Education 2. Application of the Concept of Civic Education in Everyday Life 3. Participation in Civic Education Discussions 4. Involvement in Civic Education Learning Activities

The measurement instruments above were designed to obtain a clear picture of students' literacy skills and learning outcomes in the context of Civics learning. The literacy test will be used to measure students' ability to read, understand, and apply texts related to Civics material, while the learning outcomes questionnaire will be used to collect data on student achievement after participating in the learning process with the two strategies tested in this study.

This research instrument was designed to measure students' literacy skills in Civics Education based on several relevant indicators. Each indicator will be measured using items designed to assess students' level of understanding and skills in reading, comprehending, composing, and analyzing texts related to citizenship. This instrument also measures students' ability to use appropriate language in the context.

Data collection in this research is a crucial stage because it will produce data that answers the previously defined problem formulation. To obtain accurate data, a method appropriate to the research objectives is required. This research uses primary and secondary

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data. Primary data is data obtained directly from the original or primary source, while secondary data is data that is readily available and can be retrieved or collected without further processing.

The primary data in this study were obtained from fifth-grade students of SDN Kepanjen 2 who used the RADEC (Read, Answer, Discuss, Explain, Create) Strategy assisted by Canva and the Expository Strategy assisted by Canva to improve literacy skills and learning outcomes in Civics Education. Meanwhile, secondary data is data regarding students' learning outcomes or Civics test scores that can support the analysis of this study.

In educational research, various methods are often used to collect data. One of the most common methods is the questionnaire method. This method involves providing respondents with a series of written questions to obtain the necessary information. Respondents then complete the questionnaire according to predetermined guidelines.

The data obtained from the literacy and learning outcomes tests in this study will be analyzed using various statistical techniques to ensure the accuracy and validity of the results. The first step is the Normality test, which aims to check whether the distribution of the obtained data is normally distributed or not. This test is important to determine whether the data can be processed with parametric statistical techniques. One of the Normality test techniques used is the Kolmogorov-Smirnov test, which is often chosen because of its ability to test the normality of data distribution in various types of research.

Afterward, a homogeneity test is performed to ensure that the data variances between the experimental groups are uniform. This is essential to ensure a fair and valid comparison between experimental groups 1 and 2. This homogeneity test will be conducted using Levene's Test, which measures whether two groups have equal variances.

Furthermore, to determine whether there is a significant difference between the two groups in terms of literacy skills and learning outcomes, a mean difference test (t-test) was used, specifically the Independent Samples t-test. This test allows researchers to compare the means between two different groups, namely the group using the Canva-assisted RADEC Strategy and the group using the Expository Strategy, to see whether the learning strategies significantly affect the results obtained by students. Finally, to measure the extent of improvement in literacy skills and learning outcomes after the implementation of the two strategies, the N-gain test was used. This N-gain test measures the change in scores between the pretest and posttest to assess the extent to which both groups experienced improvement in their learning achievements. The use of various statistical analysis techniques is expected to provide a clear and comprehensive picture of the influence of each learning strategy on students' literacy skills and learning outcomes.

Through systematic data analysis using SPSS 27 and various statistical techniques, this study aims to provide deeper insights into the effects of the Canva-assisted RADEC Strategy compared to the Canva-assisted Expository Strategy on students' literacy skills and learning outcomes. Furthermore, the results of this analysis are expected to provide useful recommendations in developing more effective learning strategies to improve the quality of education in elementary schools.

Result

Before conducting data analysis using the t-test (Independent Samples t-test) and MANOVA (Multivariate Analysis of Variance) to determine the effect of the Canva-assisted RADEC strategy on literacy skills and Civic Education learning outcomes, a prerequisite analysis test was first conducted. This stage aims to ensure that the data obtained from the

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research results meet the required statistical assumptions so that the analysis can be carried out correctly and the results can be trusted.

The prerequisite test in this study is a crucial initial step because the analysis results will only be valid if the data is normally distributed and the variance between groups is homogeneous. Therefore, through this prerequisite test, researchers can confirm that the implementation of the Canva-assisted RADEC strategy has an impact on student literacy skills and learning outcomes based on data that meets statistical analysis standards.

The first step was a normality test, which aimed to determine whether the data on literacy skills and student learning outcomes were normally distributed. Next, a homogeneity test was conducted to ensure that the data variation between the group treated with the Canva-assisted RADEC strategy and the conventional learning group had comparable levels of diversity. These two tests served as the basis for determining the feasibility of using the Independent Samples t-test (T-test) and the Multivariate Analysis of Variance (MANOVA) test as the main analysis techniques in this study.

Before conducting further analysis using the Independent Samples t-test and Multivariate Analysis of Variance (MANOVA), a data normality test was first conducted to ensure that the literacy skills and student learning outcomes data were normally distributed. This test is essential to ensure that the basic assumptions in parametric analysis are met, and the statistical test results obtained can be interpreted validly and responsibly.

The normality test in this study used the One-Sample Kolmogorov-Smirnov Test with Lilliefors correction. Data are considered normally distributed if the significance value (Sig.) is greater than 0.05. The results of the normality test for student literacy skills and learning outcomes can be seen in Table 4.5 below.

Table 4. Results of the One-Sample Kolmogorov-Smirnov Test of Normality on Student Literacy Skills and Learning Outcomes

Variables	**N**	**Test Statistics**	**Asymp. Sig. (2-tailed)**	**Monte Carlo Sig. (2-tailed)**	**Information**
Literacy Skills	100	.080	.116	.117	Normally distributed data
Learning outcomes	100	.081	.106	.109	Normally distributed data

The Normality Test uses the One-Sample Kolmogorov-Smirnov Test method with Lilliefors correction. Data is said to be normally distributed if the significance value (Sig.) > 0.05. Based on the test results in the table above, both literacy ability and learning outcomes data show a significance value greater than 0.05, so both meet the Normality assumption and are suitable for analysis using the t-test (Independent Samples t-test) and MANOVA (Multivariate Analysis of Variance).

After the data is declared normally distributed, the next step is to perform a homogeneity of variance test. This test aims to determine whether the variances between data groups are similar. Homogeneity of variance is an important prerequisite in parametric statistical analysis, including the Independent Samples t-test (T-test) and Multivariate Analysis of Variance (MANOVA) used in this study.

Homogeneity testing was conducted using Levene's Test of Homogeneity of Variances. The decision-making criteria in this test are if the significance value (Sig.) is greater than 0.05, then the data is declared homogeneous. Conversely, if the significance value is less than 0.05, then the data is considered non-homogeneous. The results of the homogeneity test for

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literacy skills and student learning outcomes in the study on the effect of the Canva-assisted RADEC strategy on literacy skills and learning outcomes in Civic Education are presented in Table 4.6 below.

Table 1Student Learning Outcomes

Variables	*Levene Statistics*	*df1*	*df2*	*Sig. (Based on Mean)*	Information
Literacy Skills	.987	1	98	.323	Homogeneous data
Learning outcomes	.738	1	98	.392	Homogeneous data

The homogeneity test was conducted to ensure that the variance between data groups was the same. This test used the *Levene's Test method*, where the data is said to be homogeneous if the significance value (Sig.) is greater than 0.05. Based on the results in Table 2, it is known that the significance value for literacy skills (0.323) and learning outcomes (0.392) are both greater than 0.05. Thus, it can be concluded that the data has a homogeneous variance, thus fulfilling the requirements for further analysis using the t-test (Independent Samples t-test) and MANOVA (Multivariate Analysis of Variance).

The following bar chart shows the results of the conversion from the table showing a comparison of literacy skills between the Canva-Assisted RADEC Strategy and Canva-assisted Expository Strategy**,** complete with *mean, standard deviation, standard error,* and number of samples (N) in each bar, as well as green and yellow color distinctions for clarity and attractiveness.

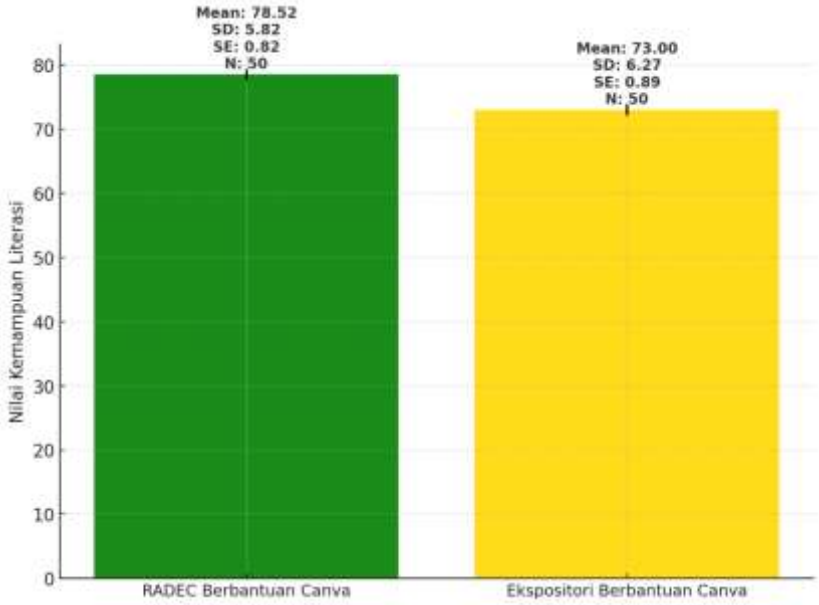

Figure 2. Comparison of Literacy Skills Based on Learning Strategies

Figure 4.1 shows the results of descriptive analysis of the literacy skills of fifth grade students differentiated based on the learning strategies used, namely the Canva-assisted RADEC strategy and the Canva-assisted Expository strategy. The number of students in each group (N) is 50 people. The group using the Canva-assisted RADEC strategy has an average (mean) literacy ability of 78.52 with a standard deviation of 5.82 and a standard error mean of

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0.82. Meanwhile, the group with the Canva-assisted Expository strategy obtained an average of 73.00, a standard deviation of 6.27, and a standard error mean of 0.89.

The data shows that the average literacy skills of students in the Canva-assisted RADEC group were 5.52 points higher than those in the Canva-assisted Expository group. This difference indicates that the RADEC strategy, which is based on reading, answering, discussing, explaining, and creating activities, is able to increase students' active participation and strengthen their literacy skills. In addition, the use of Canva as an interactive visual medium also plays a role in creating a more interesting and meaningful learning atmosphere. This makes it easier for students to understand concepts in Civic Education in a more contextual and creative manner. Thus, it can be concluded that the Canva-assisted RADEC strategy is more effective in improving students' literacy skills compared to the Canva-assisted Expository strategy.

Table 6. Results of the Independent Samples Test on Students' Literacy Skills in the RADEC Strategy and the Canva-Assisted Expository Strategy

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
KEMAMPUAN LITERASI	Equal variances assumed	2.117	.149	4.562	98	<.001	5.52000	1.20990	3.11898	7.92102
	Equal variances not assumed			4.562	97.468	<.001	5.52000	1.20990	3.11882	7.92118

Based on the results of *the Independent Samples Test* in the table above, it is known that the Sig. (2-tailed) value is 0.000 <0.05, which means there is a significant difference between the literacy skills of students taught using the RADEC strategy assisted by Canva and students taught using the expository strategy assisted by Canva. Thus, the alternative hypothesis (H_1) which states that there is an influence of the RADEC strategy on students' literacy skills is accepted, while the null hypothesis (H_0) is rejected.

The t-value = 4.562 with df = 98 indicates that the average difference between the two groups is quite strong and significant. The average difference (*Mean Difference)* of 5.52000 indicates that the group using the Canva-assisted RADEC strategy obtained a higher literacy score compared to the expository group. The 95% confidence interval (between 3.11898 and 7.92102) does not include zero, which strengthens the conclusion that the difference did not occur by chance, but rather due to the learning treatment provided.

These results show that the implementation of the Canva-assisted RADEC strategy is effective in improving students' literacy skills in Civic Education. The RADEC strategy requires students to read, answer, discuss, explain, and create, all of which encourage active engagement and in-depth understanding of the material. The use of Canva as a supporting medium also helps students construct knowledge visually and creatively, so that the learning process becomes more interesting, meaningful, and oriented towards literacy development. Thus, it can be concluded that the Canva-assisted RADEC strategy has a positive and significant influence on improving the literacy skills of fifth-grade students at SDN Kepanjen 2 compared to conventional expository learning.

To determine the effectiveness of implementing digital media-assisted learning strategies in improving student learning outcomes, an analysis was conducted of two different strategies: the RADEC (Read, Answer, Discuss, Explain, and Create) strategy and the expository strategy, both using Canva as a supporting medium. The results of this analysis provide an interesting picture of how a more active and collaborative learning approach can impact student academic achievement compared to conventional teacher-centered methods. A

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comparison of the average scores for Civics Education (PKN) learning outcomes between the two strategies is presented in the following table.

Figure . Comparison of Average Civics Learning Outcomes between the RADEC Strategy and Canva-Assisted Expository

The chart shows a bar chart comparing the average learning outcomes in Civics (PKN) between two groups of students using different learning strategies: the Canva-assisted RADEC strategy and the Canva-assisted expository strategy. The horizontal axis displays two class categories, while the vertical axis shows the average student learning outcomes. The blue bar represents the Canva-assisted RADEC strategy with an average learning outcome of 78.52, while the yellow bar represents the Canva-assisted expository strategy with an average of 71.72. These values are displayed above each bar to clarify the comparison between groups. Based on this visualization, it can be seen that the learning outcomes of students who participated in learning with the Canva-assisted RADEC strategy were higher than those who used the Canva-assisted expository strategy. This indicates that the implementation of the RADEC strategy, which emphasizes reading, answering, discussing, explaining, and creating activities, can have a positive impact on improving student learning outcomes in Civics.

Table 7. Results of the Independent Samples Test on Student Learning Outcomes in the RADEC Strategy and the Canva-Assisted Expository Strategy

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
HASIL BELAJAR PKN	Equal variances assumed	2.009	.159	5.757	98	<.001	6.80000	1.18124	4.45587	9.14413
	Equal variances not assumed			5.757	97.920	<.001	6.80000	1.18124	4.45584	9.14416

Based on the results of the Independent Samples t-test on the Civics learning outcomes variable, the t value was obtained = 5.757 with degrees of freedom (df) = 98 and a significance value (Sig. 2-tailed) = 0.000, which is smaller than the significance level of 0.05 (0.000 < 0.05). This indicates that there is a significant difference between the learning outcomes of students taught using the Canva-assisted RADEC strategy and students taught using the Canva-assisted expository strategy. In other words, the Canva-assisted RADEC strategy has a significant positive effect on the Civics learning outcomes of fifth-grade students.

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In addition, the Mean Difference value of 6.80 with a Confidence Interval (CI 95%) range of 4.45587 to 9.14413 indicates that the average learning outcomes of the group using the Canva-assisted RADEC strategy were higher than those of the expository group by approximately 6.8 points. The confidence interval values, which were all above zero, strengthen the conclusion that the differences did not occur by chance, but were truly caused by the implementation of different learning strategies.

Thus, it can be interpreted that the implementation of the RADEC (Read, Answer, Discuss, Explain, and Create) strategy with the help of Canva significantly improved student learning outcomes in Civics. This is because the RADEC strategy positions students as active participants in learning, encouraging engagement in reading, discussing, explaining, and creating, thereby enhancing a deeper understanding of civics concepts. The use of Canva as a supporting medium also contributes to attracting students' attention through engaging and interactive visual displays, making the learning process more enjoyable and meaningful.

Before examining the data obtained in detail, it is important to understand the extent to which the Canva-assisted RADEC (Read, Answer, Discuss, Explain, and Create) strategy impacts students' literacy skills and Civics (PKN) learning outcomes. The following table presents the results of the " *Tests of Between-Subjects Effects* " analysis, which demonstrates the impact of this learning strategy on both dependent variables. By examining the figures in this table, readers can objectively assess whether the Canva-assisted RADEC strategy is truly capable of improving students' literacy skills and influencing their learning outcomes. Let's explore together how this data demonstrates the effectiveness of this innovative and interactive learning method.

Table 2 MANOVA Test Results of the Effect of the Canva-Assisted RADEC Strategy on Literacy Skills and Civics Learning Outcomes

Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	KEMAMPUAN LITERASI PKN	3294.760[a]	1	3294.760	149.189	<,001
	HASIL BELAJAR PKN	2981.160[b]	1	2981.160	119.898	<,001
Intercept	KEMAMPUAN LITERASI PKN	467308.960	1	467308.960	21160.052	<,001
	HASIL BELAJAR PKN	462944.160	1	462944.160	18618.993	<,001
MODEL	KEMAMPUAN LITERASI PKN	3294.760	1	3294.760	149.189	<,001
	HASIL BELAJAR PKN	2981.160	1	2981.160	119.898	<,001
Error	KEMAMPUAN LITERASI PKN	2164.280	98	22.084		
	HASIL BELAJAR PKN	2436.680	98	24.864		
Total	KEMAMPUAN LITERASI PKN	472768.000	100			
	HASIL BELAJAR PKN	468362.000	100			
Corrected Total	KEMAMPUAN LITERASI PKN	5459.040	99			
	HASIL BELAJAR PKN	5417.840	99			

a. R Squared = .604 (Adjusted R Squared = .599)

b. R Squared = .550 (Adjusted R Squared = .546)

Based on the results of the analysis of " *Tests of Between-Subjects Effects* ", the RADEC (*Read, Answer, Discuss, Explain, and Create)* strategy assisted by Canva has a significant influence on the literacy skills and learning outcomes of Civic Education (PKN) of fifth-grade students of SDN Kepanjen 2. This is indicated by an F value of 149.189 with a p-value of 0.000 for literacy skills and an F value of 119.898 with a p-value of 0.000 for Civic Education learning outcomes. Thus, it can be concluded that the implementation of the

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RADEC strategy assisted by Canva significantly improves students' literacy skills and Civic Education learning outcomes. This strategy encourages students to actively read, answer, discuss, explain, and create, so that the learning process becomes more interactive and creative.

Furthermore, the coefficient of determination (R^2) value shows that the Canva-assisted RADEC strategy explains approximately 60.4% of the variation in students' Civics literacy skills and approximately 55.0% of the variation in Civics learning outcomes. This indicates that most of the improvement in literacy skills and learning outcomes can be explained by the implementation of this strategy, while the remainder is influenced by other factors outside the study. Thus, the Canva-assisted RADEC strategy can be considered an effective learning method and is recommended to improve the quality of Civics learning in elementary schools, especially in grade 5.

Discussion

Research on the effect of the RADEC (Read, Answer, Discuss, Explain, Create) strategy assisted by Canva on literacy skills and learning outcomes of Civic Education (PKn) in grade 5 showed significant results. The Independent Samples Test produced a Sig. (2-tailed) value of 0.000, which means there is a significant difference between the group taught using the RADEC strategy assisted by Canva and the group taught using the expository strategy assisted by Canva. The t-value of 4.562 with df = 98 and the average difference (Mean Difference) of 5.52000 indicates that the group using the RADEC strategy assisted by Canva obtained higher literacy scores compared to the expository group. The 95% confidence interval (between 3.11898 and 7.92102) does not include zero, which strengthens the conclusion that the difference did not occur by chance, but rather due to the learning treatment provided.

Theoretically, these results can be explained through constructivism theory, which emphasizes the importance of active student involvement in the learning process. The RADEC strategy encourages students to read, answer questions, discuss, explain, and create, all activities that require critical thinking and reflection. The use of Canva as a visualization tool also supports multimodal learning theory, which states that students learn more effectively when information is presented through various channels, including visuals. Canva allows students to present their ideas and understanding in an engaging and accessible format, thereby increasing motivation and conceptual understanding.

Previous research supports these findings. (Ilahy et al., 2025) in their literature review found that the use of Canva-based learning media in elementary schools can increase student participation, conceptual understanding, and learning motivation. Canva's visual and accessible nature allows students to develop 21st-century skills such as creativity, collaboration, and communication. Furthermore, research by (Jiamelatun & Suharto, 2025) shows that integrating digital literacy using Canva can enhance student creativity, which aligns with the RADEC strategy's goal of developing students' critical and creative thinking skills.

However, not all studies show significant results. (Triyono et al., 2024) in their study on differentiated learning using Canva media at SDN Karangmalang found that although there was an increase in student motivation and learning outcomes, the difference between the experimental and control groups was not statistically significant. This may be due to

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factors such as differences in strategy implementation, school context, or different student characteristics.

These differences in results can be explained by the sociocultural context theory in education, which states that the effectiveness of a learning strategy is strongly influenced by the social and cultural context in which the learning takes place. Factors such as parental support, school culture, and student learning habits can influence the successful implementation of a learning strategy. Furthermore, differences in teacher training in using Canva and the RADEC strategy may also influence the results.

The implications of these findings are theoretical, practical, and methodological. Theoretically, this study enriches understanding of the application of constructivism and multimodal learning theories in the context of Civics learning in elementary schools. Practically, the results of this study can serve as a reference for teachers implementing the Canva-assisted RADEC strategy in Civics learning, taking into account adequate training and support from various parties. Methodologically, this study demonstrates the importance of appropriate experimental design, including the selection of an appropriate control group and valid and reliable measurements, to obtain accurate and reliable results. This study provides empirical evidence that the Canva-assisted RADEC strategy can improve literacy skills and Civics learning outcomes in fifth-grade students. However, effective implementation requires attention to the local context, teacher training, and support from the entire school community.

The results of the Independent Samples t-test showed that there was a significant difference between the Civics (PKN) learning outcomes of students taught using the Canva-assisted RADEC strategy and those taught using the Canva-assisted expository strategy, with a t-value = 5.757 and a significance value (Sig. 2-tailed) = 0.000 ($p < 0.05$). This indicates that the implementation of the Canva-assisted RADEC strategy has a positive effect on improving the Civics learning outcomes of fifth-grade students.

Theoretically, the RADEC (Read, Answer, Discuss, Explain, Create) strategy is designed to encourage active student engagement in the learning process. The stages in RADEC allow students to develop in-depth understanding through reading, answering questions, discussing, explaining, and creating products. The integration of Canva as a visual aid supports this process by providing engaging and interactive media, which can increase student motivation and creativity in understanding Civics material. According to (Zainal Abidin, 2025), the use of Canva as a digital tool can improve students' skills in multimedia and interactive subjects.

Previous research supports these findings. Prastyana et al. (2023) developed a Canva-based interactive e-book using the RADEC model and found that the medium was highly valid and suitable for use in learning, and could enhance student creativity. Furthermore, Ulum (2025) demonstrated that the RADEC model effectively improved student academic achievement through five active stages that encourage critical thinking and creativity. Meanwhile, Triyono et al. (2024) found that differentiated learning using Canva media can improve student motivation and learning outcomes in science education.

However, there are also studies that show insignificant results. (Gabay, 2025) in his study in the Philippines found that despite teachers' high skills in using Canva, curriculum integration and attitudes toward technology did not always contribute significantly to student learning outcomes. This suggests that the successful use of technology in learning depends not only on technical skills but also on other factors such as curriculum and attitudes toward technology.

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The differences in results between studies that support and those that do not support significant learning can be explained by several factors. First, differences in research context, such as location, student characteristics, and curriculum used, can influence the effectiveness of learning strategies. Second, variations in the implementation of the RADEC strategy and the use of Canva, including teacher training and technological readiness, may influence the results. Third, differences in research methods, such as experimental design and instruments used, may also contribute to the differences in results.

The theoretical implication of these findings is that the Canva-assisted RADEC strategy can be an effective learning model in improving students' literacy skills and civics learning outcomes. This model supports an active and creative learning approach that is in line with the demands of the 21st century. Practically, the results of this study can serve as a basis for teachers to implement the Canva-assisted RADEC strategy in civics learning, taking into account technological readiness and adequate training. From a methodological perspective, this study emphasizes the importance of appropriate experimental design and the use of valid instruments to measure student learning outcomes.

Based on the analysis results of "Tests of Between-Subjects Effects", the Canva-assisted RADEC strategy showed a significant effect on the literacy skills and learning outcomes of fifth-grade students' Civics. The F value of 149.189 with a p-value of 0.000 for literacy skills and the F value of 119.898 with a p-value of 0.000 for Civics learning outcomes indicated that the implementation of this strategy significantly improved both aspects. Furthermore, the coefficient of determination (R^2) value indicated that the Canva-assisted RADEC strategy explained approximately 60.4% of the variation in students' Civics literacy skills and approximately 55.0% of the variation in Civics learning outcomes. This indicated that most of the improvement in literacy skills and learning outcomes could be explained by the implementation of this strategy, while the remainder was influenced by other factors outside the study.

Improved literacy skills and civics learning outcomes can be explained through constructivist principles, which emphasize the importance of active student involvement in the learning process. The RADEC model, which involves reading, answering, discussing, explaining, and creating, encourages students to think critically and creatively, as well as collaborate in understanding the subject matter. The use of Canva as a visual aid can also increase students' engagement and understanding of the material and facilitate the creative expression of ideas (Prastyana et al., 2023).

Several previous studies have shown that the application of the RADEC model can improve students' literacy skills and learning outcomes. (Ulum, 2025) found that the RADEC model is effective in improving students' academic achievement through five active stages that encourage critical thinking and creativity. (Sutinah & Normalasarie, 2025) also showed that the application of the RADEC model can improve the ability to summarize stories in fifth-grade students. (Lasari, 2023) in his meta-analysis concluded that the RADEC model has a positive effect on students' critical and creative thinking skills.

However, several studies have shown insignificant results. (Mallo, 2025) found that the RADEC model had no significant impact on the mathematical problem-solving abilities of high school students in Palu. This difference in results may be due to differences in the context, subject matter, and educational level studied. This suggests that the effectiveness of the RADEC model needs to be adjusted to student characteristics and the material being taught (Ulum et al., 2025).

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The differences in results between this study and the study (Mallo, 2025) can be explained by differences in context, subject matter, and educational level. This study was conducted at the elementary school level, using Civics (PKN) material, while Mallo's study was conducted at the high school level, using mathematics. These differences may affect the effectiveness of the RADEC model. Furthermore, differences in the implementation of learning strategies and media use may also be factors influencing the results.

These findings provide insight into the application of the Canva-assisted RADEC learning model in the context of civics learning in elementary schools. The implementation of this strategy can improve students' literacy skills and learning outcomes, as well as encourage the development of 21st-century skills such as critical, creative, and collaborative thinking. For teachers, the implementation of the Canva-assisted RADEC strategy can be an alternative to improve the quality of civics learning. Teachers can utilize Canva as a visual medium to support interactive and creative learning processes. Furthermore, this strategy can encourage students to be more active in the learning process and improve their learning outcomes.

These findings can serve as a reference for future research to develop and evaluate the effectiveness of the Canva-assisted RADEC model in various contexts and subject matter. Further research can be conducted to identify factors influencing the model's effectiveness and to develop learning models that better suit student needs and characteristics.

Conclusion

Based on the results of *the Independent Samples Test* in the table above, it is known that the Sig. (2-tailed) value is 0.000 <0.05, which means there is a significant difference between the literacy skills of students taught using the Canva-assisted RADEC strategy and students taught using the Canva-assisted expository strategy. Thus, the alternative hypothesis (H_1) which states that there is an influence of the RADEC strategy on students' literacy skills is accepted, while the null hypothesis (H_0) is rejected. And Based on the results of the Independent Samples t-test on the PKN learning outcome variable, the t value is obtained = 5.757 with degrees of freedom (df) = 98 and a significance value (Sig. 2-tailed) = 0.000, which is smaller than the significance level of 0.05 (0.000 <0.05). This indicates a significant difference between the learning outcomes of students taught using the Canva-assisted RADEC strategy and those taught using the Canva-assisted expository strategy. In other words, the Canva-assisted RADEC strategy had a significant positive impact on the Civics learning outcomes of fifth-grade students.

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