



The Effect of Instructional Media Use on Elementary Students' Learning Interest and Learning Outcomes

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ABSTRACT

Background: This study is grounded in the limited use of instructional media in classroom instruction, which contributes to low student interest in learning, reduced motivation, and suboptimal academic outcomes at the elementary school level. **Objective:** The purpose of this research is to examine the effect of instructional media use on students' learning interest and learning outcomes at SD Negeri Kaliputih. **Method:** This study employed a quantitative field research design using a survey method. The population consisted of 174 students, with a sample of 63 students from grades 1 to 6 selected for analysis. Data were collected through questionnaires and documentation and analysed using multiple linear regression, preceded by prerequisite tests including normality, linearity, and F-tests. **Result:** The findings indicate a statistically significant effect of instructional media and learning interest on student learning outcomes, with a combined contribution of 41.9%. In comparison, the remaining 58.1% is influenced by other factors not examined in this study. **Conclusion:** The effective use of instructional media plays a vital role in enhancing student engagement and academic achievement. **Contribution:** This research contributes empirical evidence supporting the integration of instructional media as a strategic approach to improve elementary learning processes and outcomes.

1. INTRODUCTION

Learning is an interactive process between students and their environment that leads to positive behavioural change. In combination with learning needs and instructional activities, effective learning should meet expected educational goals (Isrotun, 2022). These expectations reflect students' learning needs, which guide the instructional objectives formulated by teachers. In fulfilling their instructional responsibilities, teachers are required to prepare all components of the learning program carefully. This preparation ensures that instructional activities are conducted effectively and efficiently. To optimally achieve learning objectives, instructional strategies must incorporate components aligned with established learning process standards. Instructional media are among the key tools used to support the achievement of these objectives (Rozie, 2018).

The role of media in the teaching and learning process is inseparable from education. Instructional media include any tools used to transmit messages from sender to receiver in ways that stimulate students' thinking, attention, emotions, and interest in learning (Muryaningsih & Utami, 2021). Such media function as instructional aids that

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present learning content in meaningful ways. This implies that media serve as learning resources or physical platforms that contain instructional material and can attract student attention. The use of instructional media helps create learning experiences that are more engaging and enjoyable. For teachers, media serve as teaching tools that facilitate content delivery, foster student creativity, and increase student interest in learning (Nurfadhillah et al., 2021).

Learning interest is a critical factor in determining educational success (Diniaty, 2017). Interest reflects a consistent tendency to pay attention to and engage in particular activities. It represents a sense of preference and attachment to an activity without external pressure. When students are genuinely interested, they engage continuously and with enjoyment. Therefore, learning interest deserves special attention because it supports successful learning processes. Interest arising from students' internal needs is a powerful motivator in their academic efforts (Pratiwi, 2015). Children with strong learning interests tend to learn more effectively, remember information more easily, and understand material more deeply.

Fundamentally, interest reflects an individual's relationship with external stimuli. The stronger this relationship, the greater the level of interest. Students with a high interest in a subject are motivated to explore it more deeply. Students who demonstrate a strong interest in Islamic education tend to strive to improve their academic outcomes (Neliwati et al., 2023). Such students actively ask questions when encountering difficulties. Conversely, students with low interest participate less actively, which negatively affects their learning outcomes. Thus, greater interest in higher learning is associated with better academic achievement. Students with strong interests devote greater attention and effort, express a preference for learning activities, and maintain motivation, thereby improving outcomes.

Although numerous studies indicate that instructional media can enhance student engagement and learning outcomes, real-world implementation still faces challenges. These include limited teacher training (Azis et al., 2024), insufficient infrastructure (Rahul et al., 2021), and inadequate adaptation of media to diverse student needs (Salamah et al., 2025). This study seeks to explore factors influencing the effective use of instructional media and to provide recommendations that maximise their educational potential. Addressing these gaps is expected to inform policy development and teacher training initiatives.

The urgency of this study stems from the limited variety of instructional media utilised in elementary schools, which contributes to low learning interest and suboptimal student outcomes. Less interactive learning environments often result in passive and unmotivated students, limiting comprehension and engagement. Instructional media have significant potential to create engaging, concrete learning experiences aligned with students' developmental characteristics. However, empirical evidence linking media use to both learning interest and outcomes requires further strengthening. Accordingly, this research examines the relationship and impact of instructional media use on learning interest and academic outcomes using a quantitative approach, aiming to provide an evidence base for designing more effective, measurable instructional strategies in elementary education.

This study aims to analyse the effects of instructional media use on students' learning interest and academic outcomes, focusing on the types of media employed and the factors influencing their effectiveness. It also seeks to identify barriers to implementation, including technological limitations, teacher competence, and student readiness. By examining both digital and conventional media, the study aims to generate insights into optimising media use to enhance engagement and achievement, while offering practical recommendations for educators on selecting and applying instructional media suited to learner needs.

2. METHOD

2.1 Research Design

This study employed a quantitative research approach, meaning that the analysis emphasises numerical data processed using statistical methods. In this study, the independent variable, instructional media, is hypothesised to influence the dependent variables, namely students' learning interest and learning outcomes. The nature of this research is correlational, aiming to determine whether there is a relationship and effect between the use of instructional media and improvements in students' learning interest and academic outcomes at SD Negeri Kaliputih.

2.2 Participants

This research was conducted at SD Negeri Kaliputih in 2025. The site was selected because instructional media are rarely utilised in Islamic Education learning activities at the school. The sample consisted of 34 fifth-grade students. Participants were selected using purposive sampling, a technique in which samples are chosen based on

specific considerations aligned with the research objectives, ensuring that the selected participants meet predetermined characteristics relevant to the study.

2.3 Data Collection

Data were collected using two techniques, questionnaires and Documentation; a) Questionnaire. A questionnaire was used to gather structured responses from participants through a set of written questions or statements. This method is efficient when the researcher clearly understands the variables being measured and the expected responses from participants. B) Documentation. Documentation was used to collect supporting research data by recording relevant information from school documents and records. This method provided additional context and strengthened the primary data by offering concrete information related to the school profile, teachers, and students at SD Negeri Kaliputih.

2.4 Data Analysis

Prerequisite Tests: 1) Normality Test. The normality test was conducted to determine whether the data distribution met the assumptions required for parametric statistical analysis. Data are considered normally distributed when they cluster around the mean and median, forming a symmetrical bell-shaped curve; 2) Regression Linearity Test: The linearity test examined whether the relationship between variables followed a linear pattern. The decision criteria were as follows. If the significance value for Deviation from Linearity is greater than 0.05, the relationship is considered linear. If the significance value is less than 0.05, the relationship is considered nonlinear.

Multiple Linear Regression: Multiple linear regression analysis was used to examine the dependence of the dependent variables on one or more independent variables, to estimate or predict population averages or values based on known independent variables.

F-Test> The F test was conducted to determine whether the independent variables simultaneously had a statistically significant effect on the dependent variables. The decision criteria were as follows. If the significance value is greater than 0.05, the null hypothesis is accepted. If the significance value is less than 0.05, the null hypothesis is rejected.

3. RESULT AND DISCUSSION

3.1 Result

1. Instrument Validity and Reliability Testing

Instrument validity was assessed using Pearson's product-moment correlation. The instructional media instrument consisted of eight statements, all of which were deemed valid because the calculated correlation values exceeded the critical value (r table = 0.254). For the learning interest and learning outcomes instrument, 18 of 22 statements were valid, while items 17, 27, and 28 were declared invalid because their calculated correlation values were below the critical threshold.

Reliability testing was conducted to assess the instrument's consistency and stability. Based on the decision criteria, an instrument is considered reliable when Cronbach's Alpha is equal to or greater than 0.60, indicating acceptable internal consistency.

Table 1. Reliability Test Results

Reliability Statistics	
Cronbach's Alpha	N of Items
.843	30

Based on the Reliability Statistics table, the Cronbach's Alpha value is 0.843, which is greater than or equal to 0.70 and falls within the range of 0.70 to 0.90. This indicates a high level of reliability and a reasonable, appropriate interpretation. Reliability can also be confirmed using the decision criterion that the calculated correlation value exceeds the critical value. Since 0.843 is greater than 0.254, the questionnaire is considered consistent and reliable.

2. Prerequisite Analysis Tests

a) Normality Test

The normality test was conducted to determine whether the residuals from the regression model were usually distributed. This assessment used the nonparametric Kolmogorov-Smirnov test. The results of the normality test are presented in the following table.

Table 2. Residual Normality Test Results

One-Sample Kolmogorov-Smirnov Test			
N		Unstandardized Predicted Value 63	
Normal Parameters ^{a,b}	Mean	6.1269841	
	Std. Deviation	.51800000	
Most Extreme Differences	Absolute	.086	
	Positive	.077	
	Negative	-.086	
Test Statistic		.086	
Asymp. Sig. (2-tailed)		.200 ^{c,d}	
Monte Carlo Sig. (2-tailed)	Sig.	.709 ^e	
	99% Confidence Interval	Lower Bound	.698
		Upper Bound	.721

- a. Test distribution is standard
- b. Calculated from the data
- c. Lilliefors significance correction

Based on the normality test results presented above, the significance value is 0.200, which is greater than 0.05. Therefore, the residual values are normally distributed.

b) Homogeneity Test

The homogeneity test was conducted to determine whether the variances of two or more data distributions are equal. This test is commonly used as a prerequisite for independent-samples t-tests and ANOVA. The decision criteria are as follows. If the significance value is greater than 0.05, the data distribution is considered homogeneous. If the significance value is less than 0.05, the data distribution is considered nonhomogeneous.

Table 3. Homogeneity Test Results

Test of Homogeneity of Variances			
Levene Statistic	df1	df2	Sig.
2.694	1	61	.106

Based on the homogeneity test output above, the significance value is 0.106, which is greater than 0.05. This indicates that the data distribution is homogeneous.

c) Regression Linearity Test

The regression linearity test was conducted to determine whether two variables are linearly related. Good data should demonstrate a linear relationship between the independent variable (X) and the dependent variable (Y). This test serves as a prerequisite for correlation or linear regression analysis.

Table 4. Regression Linearity Test Results

ANOVA					
			Mean Square	F	Sig.
learning outcomes * interests	Between Groups	(Combined)	1.171	3.506	.000
		Linearity	16.636	49.800	.000
		Deviation from Linearity	.619	1.852	.045
	Within Groups		.334		
	Total				

Based on the regression linearity test results above, the significance value for Deviation from Linearity is 0.45, which is greater than 0.05. Therefore, it can be concluded that there is a linear relationship between students' learning interest and their learning outcomes.

2. Classical Assumption Test Results

a) Multicollinearity Test

The multicollinearity test was conducted to determine whether there are strong intercorrelations among the independent variables. A good regression model is characterised by the absence of strong correlations among independent variables, indicating that multicollinearity is absent. One of the most reliable methods for detecting multicollinearity is the use of Tolerance values and the Variance Inflation Factor (VIF).

Table 5. Multicollinearity Test Results

	Model	Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Minat (Y1)	.675	1.482
	Hasil Belajar (Y2)	.675	1.482

a. Dependent Variable: Media (X)

Based on the multicollinearity test output above, the values in the Tolerance and VIF columns indicate that the Tolerance value is 0.675, which is greater than 0.10, suggesting that multicollinearity is not present. The VIF value is 1.482, which is less than 10.00, further confirming the absence of multicollinearity. Based on these results, it can be concluded that the regression model does not exhibit multicollinearity.

b) Multiple Linear Regression

Multiple linear regression was used to examine whether the variables studied were associated. According to V. Wiratna Sujarweni, if the calculated t value exceeds the critical t value, the independent variable partially influences the dependent variable. Conversely, if the calculated t value is less than the critical value, the independent variable does not partially influence the dependent variable. The critical t value used in this study is 2.000, based on the t distribution table.

Table 6. Multiple Regression Test Results (t Test)

	Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.778	3.274		1.459	.150
	Minat (Y1)	.182	.064	.346	2.863	.006
	Hasil Belajar (Y2)	1.540	.496	.375	3.103	.003

a. Dependent Variable: Media (X)

Based on the output data above, the values in the t column indicate that the calculated value for Y1 is 2.863, which is greater than 2.000, and the calculated value for Y2 is 3.103, which is also greater than 2.000. Since both values exceed the critical t value, it can be concluded that each independent variable partially affects the dependent variable.

From the regression equation, the coefficient for learning interest (Y1) is +0.182. This means that for every one unit increase in Y1, the learning outcome (X) increases by 0.182 units. The coefficient for the second predictor (Y2) is +1.54, indicating that each one-unit increase in Y2 results in a 1.54-unit increase in X. The constant value is 4.778, meaning that when Y1 and Y2 equal zero, the predicted value of X is 4.778.

c) F Test

The F test was conducted to determine whether the independent variables simultaneously have a statistically significant effect on the dependent variable.

Table 7. F Test Results

		ANOVA ^a				
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	309.789	2	154.895	20.716	.000 ^b
	Residual	448.624	60	7.477		
	Total	758.413	62			

a. Dependent Variable: Media (X)

b. Predictors: (Constant), Hasil Belajar (Y2), Minat (Y1)

Based on the output above, the significance value for the simultaneous effect of Y1 and Y2 on X is 0.000, which is less than 0.05, and the calculated F value is 20.716, which is greater than 3.15. Therefore, the alternative hypothesis is accepted, indicating that Y1 and Y2 simultaneously have a significant effect on X.

d) Coefficient of Determination

Table 8. Coefficient of Determination Test Results (R)

		Model Summary			
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	
1	.639 ^a	.408	.389	2.73442	

a. Predictors: (Constant), Hasil Belajar (Y2), Minat (Y1)

Based on the output above, the R-squared value is 0.408. This indicates that the simultaneous influence of variables Y1 and Y2 on variable X is 40.8 per cent, while the remaining 59.2 per cent is explained by other variables not examined in this study. According to Muhibbin Syah, several additional factors may influence student learning, including internal factors such as physiological and psychological conditions, student intelligence, attitudes, talents, environmental influences, and learning approaches. Learning approaches are the strategies students use to enhance the effectiveness and efficiency of the learning process for specific subject matter.

3.2. Discussion

The findings of this study reveal that instructional media have a significant effect on students' learning interest and learning outcomes at SD Negeri Kaliputih. The use of varied instructional media increases students' interest in learning and contributes to improved academic performance. Conversely, monotonous and unengaging instructional media combined with low learning interest may lead students to become indifferent toward learning. The findings indicate that instructional media and learning interest are strongly related and exert a substantial influence on students' academic outcomes.

The use of instructional media has become a key component of modern education. Appropriate instructional media serve not only as tools for delivering information but also as practical means to enhance comprehension, stimulate learning interest, and improve student achievement (Abdulrahman et al., 2020). Learning interest is a critical element in education because students with strong interests tend to be more active and engaged in the learning process (Sandi et al., 2024). Academic achievement serves as an indicator of successful educational objectives and contributes to overall educational quality (Sanfo & Malgoubri, 2023). Therefore, understanding the relationship among instructional media, learning interest, and learning outcomes is essential for designing more effective instructional strategies.

One of the most significant impacts of instructional media is an increase in students' interest in learning. Various media, such as multimedia presentations, videos, and visual aids, capture students' attention more effectively than conventional teaching methods (Ramadhani et al., 2023). When students are engaged with material delivered through interactive media, their motivation to learn increases (Tsai et al., 2020). Interactive media also create a more enjoyable classroom environment, reducing boredom commonly associated with traditional instruction (Dai & Wang, 2024). As a result, appropriate media use transforms learning into a more dynamic experience that stimulates curiosity and deepens engagement.

The effective use of instructional media strongly influences student learning outcomes. Well-designed media help clarify complex material, strengthen retention, and facilitate mastery of challenging concepts (Lopez, 2025). For example, videos or animations used to explain biological processes or physical principles can accelerate comprehension. Visualisation and simulation tools enhance students' ability to absorb information (Juwairiah et al., 2023).

Consequently, suitable instructional media significantly improve learning outcomes by making content more accessible and engaging.

Interactive instructional media allow students to actively participate in the learning process (Daryanes et al., 2023). Tools such as computer simulations, educational games, and interactive quizzes encourage confidence, critical thinking, and practical application of knowledge (Hsu & Wu, 2023). Students who actively engage in learning tend to demonstrate stronger understanding, improved memory retention, and greater ability to apply knowledge in authentic contexts (Maceiras et al., 2025). Therefore, instructional media that support active learning enhance comprehension and overall academic performance (Ardelia et al., 2024).

Although instructional media offer substantial potential to improve learning interest and outcomes, their effectiveness depends on several factors. A primary consideration is selecting media appropriate to the subject matter and the student's needs. Different types of material require different media to optimise comprehension (Haptanti et al., 2024). Technological sophistication, teacher competence in operating media, and the availability of supporting infrastructure also influence success (Peng et al., 2024). Advanced technology alone does not guarantee effective learning if educators lack the necessary skills or resources. Thus, successful implementation depends on proper media selection, teacher readiness, and adequate institutional support.

The findings confirm that appropriate instructional media significantly enhance students' learning interest and academic outcomes. Engaging, interactive media increase student involvement, ultimately leading to improved achievement. Media aligned with instructional goals and learner characteristics are more effective in promoting understanding and mastery. Educators are therefore encouraged to thoughtfully integrate suitable instructional media to create more effective and enjoyable learning experiences, ensuring optimal achievement of educational objectives and supporting students in reaching their full potential.

4. IMPLICATIONS AND CONTRIBUTIONS

4.1 Research Implication

The findings of this study provide important guidance for educators and educational administrators to give greater attention to the use of varied and interactive instructional media, as well as to provide adequate professional development so teachers can maximise the educational potential of these tools. In addition, the results carry policy implications, encouraging the effective integration of educational technology and the optimisation of infrastructure and available resources to create learning environments that are more engaging and relevant for students.

4.2 Research Contribution

This study contributes to the body of knowledge by highlighting the importance of aligning instructional media with the characteristics of learning materials and student needs. It also demonstrates how appropriate media can enhance student engagement in the learning process. Furthermore, the study offers insight into factors that influence the effectiveness of instructional media, including teacher competence and student readiness, which may serve as references for designing more effective instructional strategies. The findings are expected to inform educators, administrators, and policymakers in developing and implementing instructional media across diverse educational contexts.

5. LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

5.1 Research Limitations

This study has several limitations that affect the generalizability of the findings. First, the research was conducted in a limited school setting, which may limit its broader application across different educational levels or regions. Second, the focus on specific types of instructional media, such as multimedia and teaching aids, does not represent the full spectrum of available media; therefore, other forms that may produce different effects were not examined. Time and resource constraints also limited deeper exploration of additional factors influencing media effectiveness, including technological sophistication, teacher expertise, and student readiness.

5.2 Recommendations for Future Research Directions

Future research is recommended to expand the scope by examining a wider variety of instructional media, including mobile application-based learning, gamification, and e-learning platforms, to gain a more comprehensive understanding of their impact on student learning interest and outcomes. Studies conducted across different

educational levels and regions would further clarify contextual influences. Additional research should also examine teachers' technological competence and students' readiness to understand implementation challenges and opportunities better.

6. CONCLUSION

This study concludes that the use of appropriate instructional media has a significant positive influence on students' learning interest and academic achievement. When teachers incorporate media such as educational videos, multimedia presentations, interactive slides, and concrete instructional aids, classroom instruction becomes more engaging and less monotonous. These media stimulate multiple senses simultaneously, helping students focus their attention and better understand the material presented. As students become more actively involved in the learning process, their curiosity and motivation increase. This heightened engagement encourages deeper cognitive processing, which ultimately leads to stronger comprehension and improved academic performance. In this way, instructional media function not merely as supplementary tools but as integral components of effective teaching and learning.

However, the effectiveness of instructional media is not determined solely by the type or sophistication of the media used. Its success depends mainly on several supporting factors. Teacher competence in selecting, designing, and integrating media into lesson plans is essential to ensure that media use aligns with instructional objectives. In addition, students' readiness to interact with technology, including their digital literacy skills and learning habits, influences how effectively media can support understanding. Adequate infrastructure, such as access to devices, stable electricity, and reliable internet connectivity, also plays a crucial role. Without these supporting conditions, even well-designed and innovative media may fail to achieve their intended instructional impact.

Instructional media can serve as powerful pedagogical tools for enhancing both student interest and academic outcomes when strategically implemented and supported by institutional resources. Schools and educational stakeholders should prioritise continuous professional development to strengthen teachers' technological and pedagogical skills. At the same time, investment in infrastructure and learning facilities is necessary to sustain effective media integration. By aligning instructional media with curricular goals and learner needs while ensuring adequate support systems, educators can create learning environments that are interactive, meaningful, and conducive to optimal academic achievement.

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Catur Cahya Ningrum contributed to the research design, methodological framework, data collection, data analysis, literature review, and formulation of conclusions. Abu Dharin contributed to the comprehensive review and editing of the manuscript.

Author Contribution Statement

All authors discussed the results, contributed to the final manuscript, and approved the final version for publication. Catur Cahya Ningrum contributed to the research design, methodological framework, data collection, data analysis, literature review, and formulation of conclusions. Abu Dharin contributed to the comprehensive review and editing of the manuscript.

Declaration of Generative AI (GenAI) Usage in Scientific Writing

The authors declare that artificial intelligence tools were used solely for language editing, clarity improvement, and formatting refinement. All aspects of research design, data collection, analysis, interpretation, and conclusions were conducted entirely by the authors. The authors assume full responsibility for the accuracy, originality, and integrity of the manuscript. All instances of Generative AI usage in this article were conducted by the authors in accordance with the [IJITL GenAI Tool Usage Policy](#), with the authors assuming full responsibility for the originality, accuracy, and integrity of the work."

Conflict of Interest Statement

The authors declare that they have no significant competing financial, professional or personal interests that might have influenced the performance or presentation of the work described in this manuscript

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