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The Influence of Video Media on Motivation and Learning Outcomes of Third Grade Students in Elementary School

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Abstract

This study aims to examine the effect of video media on students' motivation and learning outcomes in Natural and Social Sciences (IPAS) for Grade III at SD Negeri 34 Simpang Haru. Motivated by the low motivation and achievement levels among students and the limited use of interactive media, this quasi-experimental study used a Posttest-Only Control Group Design involving 52 students divided into an experimental group (video media) and a control group (PowerPoint media). Data were collected using motivation questionnaires and objective tests and analyzed using t-tests and Two-Way ANOVA. The results showed that video media significantly improved motivation ($p = 0.000$) and learning outcomes ($p = 0.002$) in the experimental group. Furthermore, there were significant differences between the two groups in both motivation ($p = 0.000$) and learning outcomes ($p = 0.020$). The Two-Way ANOVA also revealed significant interaction effects between media type and class group on motivation ($F = 618.221$; $\eta^2 = 0.925$) and learning outcomes ($F = 5.809$; $\eta^2 = 0.104$). These findings suggest that video media is an effective tool for enhancing learning, especially when aligned with classroom conditions.

INTRODUCTION

The rapid advancement of educational technology has introduced diverse instructional media into the learning environment, significantly transforming how students engage with content and acquire knowledge (Chiu et al., 2020; Tuhuteru et al., 2023). Among these, video media has emerged as a powerful tool for enhancing student understanding through a combination of visual, auditory, and contextual stimuli. In primary education, where students rely heavily on concrete

representations to comprehend abstract concepts, the integration of video into instruction has the potential to make learning experiences more engaging, meaningful, and effective (Ramlah et al., 2022).

Despite the availability of such technologies, many classrooms still rely on traditional instructional methods, such as PowerPoint presentations or textbook-based learning, which often lack the interactivity and contextual richness required to sustain student motivation. This is particularly evident in the context of Natural and Social Sciences (IPAS) at the elementary level, where subject matter often includes complex and abstract phenomena. As a result, students frequently demonstrate low levels of engagement and unsatisfactory academic performance, highlighting the urgent need for more dynamic and interactive teaching approaches (Jannah et al., 2020; Wu et al., 2021).

Existing studies have consistently shown that video media can positively influence learning outcomes and student motivation Ardiana & Ananda, (2022); Sutarto et al., (2020) found that instructional videos facilitate better content retention, conceptual understanding, and learner satisfaction, especially when aligned with pedagogical goals. In the context of science education, the use of video has been shown to improve students' visualization of natural processes and enhance inquiry-based learning. However, most of these studies focus on secondary or higher education settings, leaving a gap in the empirical evidence at the elementary school level, particularly in integrated subjects like IPAS.

Furthermore, while several studies confirm the benefits of video media on learning performance, few have examined its dual impact on both cognitive (learning outcomes) and affective (motivation) domains simultaneously. Most research tends to isolate one variable, thus limiting our understanding of how video media holistically influences student learning. In addition, the effectiveness of video media is often assumed to be consistent across educational contexts, with limited exploration into how classroom conditions or instructional environments may moderate its impact (Andriyani & Suniasih, 2021; Yousef, 2021).

This study addresses that gap by investigating the effect of video-based instruction on both learning outcomes and student motivation in the IPAS subject among Grade III elementary school students. By comparing the use of video media with conventional PowerPoint instruction, the study provides a direct comparison of two commonly used teaching approaches and evaluates their effectiveness through rigorous experimental design. It also incorporates statistical analysis of interaction effects, offering deeper insight into how the classroom environment influences media effectiveness (Hardiansyah, 2022; Sartono et al., 2022).

The novelty of this study lies in its integrated analysis of cognitive and affective learning outcomes in early education, using a quasi-experimental design with Two-Way ANOVA to capture both main and interaction effects. Moreover, it contributes to the limited body of literature on media use in the IPAS curriculum at the primary school level, offering empirical evidence that can guide pedagogical decisions in similar contexts. By focusing on a public elementary school in Indonesia, this study also adds valuable localized insights to the global discourse on media-enhanced learning.

This research aims to examine whether video media significantly improves student motivation and learning outcomes in IPAS and whether these effects vary depending on classroom conditions. The findings are expected to inform educators and curriculum developers on how best to leverage

multimedia tools to foster meaningful and effective learning experiences in early education (Chen, 2020; Kuncoro & Hidayati, 2021).

METHODS

This study employed a quasi-experimental research design, specifically the Posttest-Only Control Group Design, to investigate the effect of video-based instructional media on students' motivation and learning outcomes in the subject of Natural and Social Sciences (IPAS). The research was conducted at SD Negeri 34 Simpang Haru in the academic year 2024/2025. Two intact classes were selected as the sample using a total sampling technique, resulting in a total of 52 Grade III students, with 26 students in the experimental group and 26 in the control group. The experimental group received instruction using video media, while the control group was taught using conventional PowerPoint presentations.

The instruments used in the study consisted of a learning motivation questionnaire and a multiple-choice objective test for assessing learning outcomes. Both instruments were validated by content experts and tested for reliability prior to use. Data analysis was conducted using quantitative statistical methods, including tests for normality and homogeneity, independent sample t-tests, paired sample t-tests, and Two-Way ANOVA to determine both the main effects and interaction effects of the independent variables. All analyses were conducted using SPSS software, with a significance level set at $p < 0.05$.

RESULT AND DISCUSSION

This section presents the quantitative findings regarding the effects of video media on students' motivation and learning outcomes in the subject of Natural and Social Sciences (IPAS) in Grade III at SD Negeri 34 Simpang Haru. The statistical analyses include Paired Sample t-Test, Independent Sample t-Test, and Two-Way ANOVA.

Descriptive Statistics of Motivation and Learning Outcomes

The descriptive data in Table 1 present the mean and standard deviation of students' motivation and learning outcomes in both the experimental and control groups.

Table 1. Descriptive Statistics of Learning Motivation and Outcomes

Variable	Group	N	Mean	Std. Deviation
Learning Motivation	Experimental	26	85.46	4.12
	Control	26	72.11	5.89
Learning Outcome	Experimental	26	82.27	6.41
	Control	26	75.23	5.84

The students in the experimental group who used video-based learning media demonstrated higher motivation ($M = 85.46$) and better learning outcomes ($M = 82.27$) compared to the control group ($M = 72.11$ for motivation and $M = 75.23$ for learning outcomes). This indicates a potential effect of video media on both variables.

Paired Sample t-Test Results

To determine whether there was a significant increase in motivation and learning outcomes in the experimental group before and after the intervention, a paired sample t-test was conducted.

Table 2. Paired Sample t-Test Results for Experimental Group

Variable	T	df	Sig. (2-tailed)
Learning Motivation	9.738	25	0.000
Learning Outcome	3.382	25	0.002

The paired sample t-test showed a statistically significant increase in both learning motivation and outcomes in the experimental group after the implementation of video media. The significance values ($p < 0.05$) indicate that the use of video media effectively enhanced student motivation and performance.

Independent Sample t-Test and Two-Way ANOVA

An independent sample t-test was conducted to examine the differences between the experimental and control groups. Additionally, a Two-Way ANOVA was used to assess the interaction between media type and group on both motivation and learning outcomes.

Table 3. Summary of Independent t-Test and Two-Way ANOVA Results

Test Type	Variable	Test Value	Sig. (p-value)	Partial η^2
Independent t-Test	Learning Motivation	t = 8.364	0.000	-
	Learning Outcome	t = 2.398	0.020	-
Two-Way ANOVA	Learning Motivation	F = 618.221	0.000	0.925
	Learning Outcome	F = 5.809	0.020	0.104

The independent sample t-test confirmed significant differences in both motivation and learning outcomes between the groups, favoring the video media group. The Two-Way ANOVA indicated a significant interaction between media type and group, particularly with a very large effect size on motivation ($\eta^2 = 0.925$) and a moderate effect size on learning outcomes ($\eta^2 = 0.104$). This suggests that the effectiveness of media is influenced by class characteristics and instructional conditions.

Discussion

The findings of this study reveal that the integration of video media in science and social studies (IPAS) learning significantly improves students' motivation and academic performance. This result supports previous research that emphasizes the role of multimedia in enhancing student engagement and learning outcomes through visual and auditory stimulation (Barut Tugtekin & Dursun, 2022; Syawaluddin et al., 2020). Video content provides dynamic and contextual experiences that are especially beneficial in elementary-level education, where learners often rely on concrete representations to grasp abstract concepts.

The significant increase in motivation among students in the experimental group can be attributed to the multimedia elements of video, which offer more appealing and engaging content compared to static PowerPoint slides. According to Keller's ARCS model of motivation (1987), attention and relevance are critical factors in motivating learners. Video media, by incorporating storytelling, animations, and real-life visuals, effectively capture students' attention and make learning content more meaningful and enjoyable (Nurwulan et al., 2020; Rahma et al., 2024; Utaminingsih et al., 2024).

In terms of academic performance, the improvement observed in the experimental group indicates that video-based instruction does not only foster interest but also facilitates better understanding and retention of learning material. This aligns with cognitive theory of multimedia learning, which posits that students learn better when information is presented through both verbal

and visual channels (Mayer, 2001). The ability of video to combine narration, imagery, and motion enables students to construct mental models that support deeper learning.

The interaction effects found through Two-Way ANOVA further suggest that the benefits of video media are not uniform across all settings; rather, they are influenced by classroom conditions and student characteristics. This highlights the importance of considering the learning context when selecting instructional media. While video media proved effective in this study, its implementation should be tailored to the readiness, preferences, and cognitive development of students in specific learning environments (Hanif, 2020; Hita et al., 2024).

The study contributes to the growing evidence that innovative and interactive media can transform traditional teaching approaches and improve educational outcomes. However, the results also call for teachers to be more selective and purposeful in choosing instructional media based on pedagogical needs rather than technological trends alone (Inwanti & Setiawan, 2025; Rachmavita, 2020). Further research is recommended to explore long-term impacts of video media and to compare its effectiveness with other emerging tools such as gamification and augmented reality in elementary education.

CONCLUSIONS

This study concludes that the use of video media in teaching Natural and Social Sciences (IPAS) has a significant positive impact on both students' learning motivation and learning outcomes in Grade III at SD Negeri 34 Simpang Haru. The findings demonstrate that students who received instruction through video media showed greater improvement compared to those taught using conventional PowerPoint presentations. Furthermore, the results of the Two-Way ANOVA analysis reveal that the effectiveness of video media is influenced by classroom conditions, indicating an interaction between media type and class group. These results highlight the potential of video media as an effective and interactive instructional tool for enhancing both cognitive and affective learning domains in elementary education.

CONFLICTS OF INTEREST STATEMENT

Regarding this study, the author declares that there is no conflict of interest.

AUTHOR CONTRIBUTIONS

Study concept and design: Anggun Radika Putri. Acquisition of data: Darmansyah Darmansyah. Analysis and interpretation of data: Alwen Bentri. Drafting the manuscript: Anggun Radika Putri. Critical revision of the manuscript for important intellectual content: Muhammadiyah Muhammadiyah. Statistical analysis: Anggun Radika Putri.

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