PPSDP International Journal of Education
Volume 5 (1) 2026, 150-160
E-ISSN 2829-5196, P-ISSN 2830-3229

The Effect of Audio-Visual Learning Media and Learning Motivation on Science Learning Outcomes of Grade VII Students

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Article History: Received on 3 December 2025, Revised on 9 December 2025, Published on 3 February 2026

Abstract: This study determined and described the effect of audiovisual learning media and learning motivation on the science learning outcomes of Grade VII students at public junior high schools (SMP) in Sako District, Palembang. The research sample consisted of 61 Grade VII students from two schools: SMP Mandiri Palembang (29 students) and SMP Binatama Palembang (32 students). Sampling techniques included total sampling and cluster random sampling. Data were collected by distributing questionnaires featuring a 5-point Likert scale to measure 60 statement items, alongside a final assignment comprising 30 questions. The data analysis technique employed was simple and multiple linear regression analysis. The results indicated that: 1) There is a significant influence of audiovisual learning media on the science learning outcomes of Grade VII students. 2) There is a significant influence of learning motivation on the science learning outcomes of Grade VII students. 3) Collectively, audiovisual learning media and learning motivation significantly influence the science learning outcomes of Grade VII students at the studied schools in Sako District, Palembang. The findings suggest that educators and institutions should consider integrating audiovisual media into their teaching strategies and actively work to enhance student learning motivation to improve science learning outcomes in junior high school settings. This study contributes to the existing literature by simultaneously examining the combined and individual effects of audiovisual learning media and learning motivation on science learning outcomes within a specific Indonesian educational context. It provides empirical evidence supporting the importance of both technological tools and psychological factors in achieving better academic performance.

Keywords: Audio Visual Learning Media, Learning Motivation, Learning Outcomes

A. Introduction

Education is a crucial foundation for developing quality human resources in the era of globalization and rapid technological development (Van Hiep, 2021). The higher a country's education level, the more advanced its science and technology will be. This is demonstrated by the rapid development of information and communication technology (ICT), which has led to rapid interaction and information delivery,

necessitating the need for adaptation to these changes in the learning process (Lailan, 2024). Rapidly developing technological advances (science and technology) in education significantly impact the learning process (Ghory & Ghafory, 2021; Lavicza et al., 2022). Teaching and learning, or the teaching and learning process, is an interactive process between teachers and students. Learning is an integral part of education, supported by various learning elements, including objectives, subject matter, facilities and infrastructure, learning situations or conditions, learning media, the learning environment, learning methods, and evaluation. All of these learning elements significantly influence the success of the teaching and learning process, improving student learning outcomes and motivation.

Junior High School (SMP) is the basic level of formal education in Indonesia. Article 17 of the National Education System Law Number 20 of 2003 defines Junior High School (SMP) as the educational level that underpins secondary education. This means that Junior High School (SMP) education teaches several compulsory subjects, namely Natural Sciences (IPA), Social Sciences (IPS), Mathematics, Civics (PKN), Indonesian Language (Bahasa Indonesia), and Arts and Culture (SBDP) (Muhammaditya & Hardjosoekarto, 2021). Natural Sciences (IPA) is a field of study directly related to human life and the study of the natural world around us. As a subject, IPA plays a crucial role in shaping students' character and way of thinking. It would be inappropriate to say that IPA exists solely for itself, but rather that it plays a universal role in other disciplines and in the development of modern technology (Jeheman et al., 2019). Furthermore, IPA, as a discipline, contributes to the development of science and technology, provides solutions to life's problems, and equips students with thinking and argumentation skills. Therefore, IPA remains a key component of every level of education in Indonesia.

Science plays a crucial role in the development of science and technology (Lestari et al., 2021). In addition to student factors, teachers are also a key determinant of the success of classroom learning. Teachers play a crucial role in education and teaching in schools. Therefore, if learning is successful, the problem of low science learning outcomes will be avoided. The use of learning media in the teaching and learning process can foster new interests and desires in students, as well as increase their motivation to learn (Charline et al., 2023; Febrina & Setiawan, 2024). Furthermore, media also has a positive psychological impact on students. Therefore, the use of learning media not only increases learning motivation but also deepens students' understanding of the subject matter, which in turn improves learning outcomes, particularly in science (Adam, 2023). Students do not always develop critical, analytical, systematic, logical, and creative skills, as well as teamwork skills. Learning must be conducted in a way that is enjoyable and comfortable for students. Furthermore, the teaching materials prepared by teachers must be truly tailored to the students' needs, and the science concepts they will learn should be as relevant as possible to the situations they will experience directly.

Motivation is essential in the learning process, as a person without learning motivation will be unable to engage in learning activities (Ferrer et al., 2022; Rahiem, 2021). This is supported by research by Budiyani et al. (2021), which states that students with high learning motivation will have a positive impact on their learning outcomes, while students with low learning motivation will have a negative impact on their learning outcomes. Other research also shows a significant relationship between students' attitudes and motivation towards science learning (Jufrida et al., 2019).

Learning media plays a crucial role in learning activities, supporting the learning process and making it more interactive and less boring for students (Hasanah Lubis et al., 2023; Trajaya et al., 2025). Currently, the most suitable media for science learning is audiovisual media. Audiovisual media is a tool used to assist students in the listening process. Besides listening, students can also view images such as PowerPoint presentations and are equipped with loudspeakers, televisions, and videos. This allows students to fulfill several elements, including paying attention, listening, understanding, and remembering, thereby increasing their enthusiasm for learning (Setiyawan, 2021). Using engaging and appropriate audiovisual media for materials and problems, especially those related to the characteristics and abilities of students, can be beneficial for the learning process, particularly in capturing attention and reducing boredom. This can create an engaging, active, and motivated learning experience while fostering a more varied learning experience. Students are able to easily comprehend, analyze, and absorb learning materials in an effective learning environment, particularly through media utilization. This is supported by research by Suryana et al. (2022), which concluded that the use of visual learning media in science learning significantly impacts student learning outcomes in the classroom. Through learning outcomes, students are able to assess their abilities and achieve optimal learning outcomes. Good learning outcomes are one measure of the success of learning (Kang & Kim, 2021).

Education plays a significant role in developing high-quality human resources (Siregar et al., 2024). Schools, as formal institutions, have a significant responsibility to create a positive learning environment, provide adequate facilities, and implement an efficient learning process. However, many schools face various challenges, both in terms of management, resources, and school community involvement. These issues require further research and analysis to find appropriate solutions to improve the quality of education in schools. SMP Mandiri Palembang and SMP Binatama Palembang, as two of the formal educational institutions in South Sumatra Province, have a responsibility to provide quality education to their students. Based on the results of observations and interviews conducted by researchers with homeroom teachers of grade VII SMP Mandiri Palembang and SMP Binatama Palembang, it is known that the daily assignment scores of grade VII students, especially in science subjects, indicate that students have assignment scores below the standard criteria for achieving learning objectives (KKTP).

In SMP Mandiri Palembang, out of 29 grade VII students, only 20 students have achieved the KKTP score of 75.80 in science subjects, while in SMP Binatama, out of 128 grade VII students, only half of the number met the KKTP, which is dominated by a score of 78. The low value of learning outcomes obtained by students is a trigger for low student motivation during the learning process. This indication is known from student learning behavior in class, including when students cannot answer questions. The low learning outcomes indicate that the teaching and learning process is not optimal so that students tend to be passive. In addition to low student learning outcomes, another factor is a lack of motivation to learn, which leads to students being less enthusiastic about participating in lessons, less active in asking questions and discussions, and less independent in their learning. Motivation to learn plays a crucial role in the learning process and in achieving desired outcomes. This motivation provides encouragement, enthusiasm, and enjoyment in learning. Students with high motivation tend to have more energy for learning activities, ultimately enabling them to achieve better performance.

Utilizing school facilities opens up a wide visual window for the teaching and learning process, such as the use of projectors to support classroom learning, making it more dynamic, interactive, and effective (Wang et al., 2022). Based on researchers' observations, SMP Mandiri Palembang and SMP Binatama have adequate facilities, including projectors, which should be utilized to enrich students' learning experiences. Unfortunately, the potential of these facilities has not been optimally explored due to a lack of initiative and support from some teachers in integrating them into daily teaching methods. As a result, students may miss out on opportunities for more visual and interactive learning, which, in turn, could enhance their motivation and engagement in the learning process.

The problems experienced by these students must be resolved immediately, as science is a vital subject in human life. Science teaches us to think logically, systematically, carefully, objectively, and openly in solving problems and facing future challenges. Therefore, it is crucial for educators to utilize technology as a teaching aid. The use of technology as a medium or learning resource is crucial in light of current developments. Therefore, teachers need broad insight, especially those capable of learning about technology. Based on the above background, supported by observations, the researcher is interested in conducting a study entitled "The Influence of Audio-Visual Learning Media and Learning Motivation on Science Learning Outcomes for Grade VII Students at a Junior High School in Sako District, Palembang."

B. Methods

This research was conducted on junior high school students in Sako District, Palembang, namely SMP Mandiri Palembang. This research was conducted from April to June 2025. The type of research used in this study is quantitative research.

Quantitative research methods are the process of collecting data and analyzing data that is carried out systematically and logically to achieve certain goals. This research uses a partial correlation approach. Partial correlation research is a research method used for analysis or hypothesis testing if the researcher intends to determine the influence or relationship between independent and dependent variables, where one of the independent variables is controlled or made constant (Sugiyono, 2019). The focus of this research is to reveal the extent to which audio-visual learning media and learning motivation influence the improvement of student learning outcomes. The population of this study was all seventh-grade students of SMP Mandiri Palembang and SMP Binatama Palembang. In this study, the sampling technique used to determine the research sample was the total sampling and cluster random sampling techniques.

The sampling technique used in the study at SMP Mandiri Palembang was total sampling, considering that the study population consisted of only one class, Class VII 1, with 29 students. Meanwhile, the sampling technique used in the study at SMP Binatama Palembang was cluster random sampling. Of the four classes, each with 32 students, only one class, Class VII 1, was randomly selected as the research sample using a lottery method. The data collection techniques used in this study included various methods, including questionnaires, observation, tests, and documentation. In this study, the variables studied were audio-visual learning media (X1), learning motivation (X2), and learning outcomes (Y). The sample used in the instrument validity test was teachers included in the study population but not included in the research sample. Instrument validity in this study was measured using the product-moment formula of the person.

C. Results and Discussion

Based on the above description, which examines data from prerequisites to proving the influence of a variable in accordance with the proposed hypothesis, each hypothesis yields a significant influence between audio-visual learning media and learning motivation on the science learning outcomes of seventh-grade students at a junior high school in Sako District, Palembang.

The Influence of Audio-Visual Learning Media on Science Learning Outcomes

Data collection began with observations, questionnaires, and documentation, resulting in Likert-type questionnaire results. This data served as a guideline for data processing to determine whether audio-visual learning media had an effect on learning outcomes. To determine whether the data could be used, prerequisite testing was necessary before conducting more in-depth testing or hypotheses. If the data met the requirements, the researcher conducted an in-depth test to determine the influence of the learning media variables on learning outcomes. From the results of the t-test, the influence of audio-visual learning media on learning outcomes obtained a t-count

of 23.047, or a value of 23.047 > 2.002, and if using a significance level of $\alpha < 0.05$, according to the test results, it is 0.000, then it can be written 0.000 < 0.05. This means that the value of audio-visual learning media has a positive and significant effect on learning outcomes. The results of the study prove the first hypothesis that there is an influence of audio-visual learning media on the learning outcomes of class VII science at SMP Sako District Palembang.

The r2 (r-square) test yielded a result of 0.729, or 72.9%. This indicates that audio-visual learning media contributes 72.9% to student learning outcomes, while the remaining 27.1% is influenced by other factors, most likely the student's environment or personality, which could be related to their personal characteristics. From the data described, after conducting data analysis, it can be concluded that there is an influence between audio-visual learning media and learning outcomes. The analysis also suggests that engaging audio-visual learning media will further improve student learning outcomes, while conversely, the less engaging or unengaging audio-visual learning media will also lower student learning outcomes. A study by Mahfudin et al. (2021), entitled "Application of Audio-Visual-Assisted Problem-Based Learning Models and Learning Motivation for Science in Elementary Schools," was conducted. The results of the study showed several important findings: (1) There is a significant difference in science learning outcomes. (2) Students with strong learning motivation have higher science learning outcomes when taught with problem-based learning strategies supported by audio-visuals. (3) There is an interaction effect between the use of problem-based learning strategies with audio-visual support and students' learning motivation on science learning outcomes. With a significant influence on learning outcomes, audio-visual learning media must have good appeal in order to create optimal learning outcomes. This can improve school quality and also fulfill the school's vision and mission.

The Influence of Learning Motivation on the Science Learning Outcomes

After conducting observations, questionnaires, and documentation, data from the Likert-type questionnaire were obtained. This data was used as a guideline for data processing to determine whether or not the principal's motivation influences teacher performance. To determine whether the data is usable, prerequisite tests are required before conducting more in-depth tests, including validity, normality, homogeneity, and linearity. If the data meets these requirements, the researcher will conduct an in-depth test to determine whether or not the principal's motivation variable influences teacher performance. The t-test results showed that the influence of learning motivation on learning outcomes was 24.834, or a t-value of 24.834 > 2.002, with a significance value of 0.000 < 0.05. This indicates that learning motivation has a positive and significant effect on learning outcomes. The results of the study confirmed the second hypothesis, namely that learning motivation influences seventh-grade science learning outcomes at junior high schools in Sako District, Palembang. The r^2 (r-square) test yielded a value of 0.812, or 81.2%. This means that 81.2% of learning motivation

contributes to learning outcomes, while the remaining 18.1% is influenced by other factors, most likely the environment or student personality.

From the test results above, it can be concluded that learning motivation influences learning outcomes. The analysis also suggests that higher learning motivation leads to higher learning outcomes, and vice versa, lower learning motivation leads to lower learning outcomes. Learning motivation directly influences seventh-grade science learning outcomes at junior high schools in Sako District, Palembang. A study by Yeni et al. (2022) entitled "The Effect of Student Learning Motivation on Student Learning Outcomes at SMP Negeri 1 X Koto Diatas" showed a positive and significant relationship between the influence of motivation on the learning outcomes of seventh-grade students at SMP Negeri 1 X Koto. This is evidenced by the analysis results obtained with a calculated r = 0.44. Based on the research conducted, there are similarities and differences that will be addressed in the current study. The similarities in the influence of learning motivation on junior high school student learning outcomes are similar, while the differences are that the current study uses audio-visual learning media and the learning materials applied are junior high school science learning materials. From the findings of this study and previous research, the influence of learning motivation on learning outcomes is crucial, so there is a need for a teacher approach to provide student motivation. Teachers can do this by taking a more in-depth approach as a way to approach students and provide motivation so that learning outcomes will improve.

The Influence of Audio-Visual Learning Media and Learning Motivation on Science Learning Outcomes

The process of determining the influence of observation, questionnaires, and documentation resulted in Likert-type questionnaire data. This data was used as a guideline for data processing to determine whether audio-visual learning media and learning motivation influence learning outcomes. To determine whether the data is usable, prerequisite testing is necessary before conducting more in-depth hypothesis testing. If the data meets the requirements, the researcher will conduct an in-depth test to determine the influence of audio-visual learning media and learning motivation on learning outcomes. The results of the simultaneous test yielded a significance value (sig) of 0.025 < 0.05. This indicates a significant simultaneous influence, with the calculated f value > f table, or 7.868 > 3.1253, between the independent variables on the dependent variable. Therefore, the results of this study prove the third hypothesis: that audio-visual learning media and learning motivation jointly influence learning outcomes. The r^2 (r-square) test yielded a result of 0.879, or 87.9%. This means that the influence of learning media and learning motivation on learning outcomes is 87.9%, while the remaining 12.1% is influenced by other factors not examined. The direction of the relationship between the first variable in this study is the relationship between audio-visual learning media and learning outcomes. The statistical calculations indicate a positive relationship between audio-visual learning media and learning

outcomes. This indicates that better and more engaging audio-visual learning media are likely to improve learning outcomes. Empirical data testing showed positive and significant results. These results imply that audio-visual learning media influence learning outcomes.

The second variable in this study examined the relationship between learning motivation and learning outcomes. Statistical calculations indicate a positive relationship between learning motivation and learning outcomes. This indicates that improved learning motivation leads to improved learning outcomes. Empirical data testing revealed positive and significant results. These results indicate that learning motivation determines learning outcomes. Learning media plays a crucial role in the teaching and learning process. By utilizing various types of media, the learning experience becomes more engaging, effective, and efficient. The benefits of media in learning encompass several important aspects, including (1) the delivery of learning materials can be done uniformly, (2) the learning process becomes clearer and more engaging for students, (3) interaction between students and teachers increases, (4) time and energy efficiency in learning is also achieved, (5) the quality of student learning outcomes can be improved, (6) media allows learning to take place anytime and anywhere, (7) media can encourage positive student attitudes toward the material and the learning process, and (8) the teacher's role can be transformed to be more positive and productive (Fadilah et al., 2023).

"Motivation" is the most common term used to describe both success and failure in completing various complex tasks. Learning motivation is a key factor influencing the effectiveness of the learning process. Students tend to learn better when driven by strong motivation. Learning motivation is the drive, both internal and external, that students experience during the learning process (Novianti et al., 2020). Therefore, based on the findings of this study and in line with previous research, audiovisual learning media and learning motivation are closely related to learning outcomes. Therefore, this relationship is a significant influence on learning outcomes, leading to student achievement.

D. Conclusions

This study, based on data from 61 junior high school students in Sako District, Palembang, confirms that both audiovisual learning media and student learning motivation have a significant positive influence on science learning outcomes for seventh-grade students. The key finding is that each factor individually and both factors together statistically enhance academic performance, demonstrating that the use of multimedia tools and the cultivation of student motivation are critical drivers of educational success in this context. The practical implication is clear and direct: to improve science learning outcomes, educators and school administrators should strategically integrate diverse audiovisual media into their teaching methodologies while concurrently implementing programs and classroom strategies designed to

boost student motivation. This dual approach, addressing both instructional tools and student engagement, is likely to yield the greatest benefit. For future research, it is recommended to expand this investigation to other subjects, grade levels, and school districts to determine the generalizability of these findings. Studies could also explore the specific types of audiovisual media that are most effective or examine the interplay between these factors and other variables, such as teacher training or classroom resources, to develop a more comprehensive model for enhancing educational achievement.

E. Acknowledgement

We thank to the Rector and stakeholders of Universitas PGRI Palembang.

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