



Audiovisual Media and Basketball Learning Outcomes in Seventh-Grade Students

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Abstract.

Objectives: To examine changes in basketball dribbling performance following audiovisual instruction among seventh-grade students at Suci Murni Private Junior High School during the 2023/2024 academic year.

Methods: A one-group pretest–posttest study was conducted in May 2024 involving 20 seventh-grade students. Participants received basketball dribbling instruction using audiovisual media. Dribbling performance was assessed before and after the intervention. Pretest and posttest scores were compared using a paired-samples t-test at a significance level of 0.05.

Results: The mean dribbling score increased from 17.60 at pretest to 21.10 at posttest, a gain of 3.50 points (19.89%). The paired-samples t-test indicated a statistically significant difference between pretest and posttest scores ($t(19) = -10.405$, $p < 0.001$).

Conclusion: Audiovisual instruction was associated with improved basketball dribbling performance among the participating students. However, the absence of a control group limits attribution of the improvement solely to the intervention.

Keywords: audiovisual media; basketball; dribbling; learning outcomes; physical education.

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How to Cite:

INTRODUCTION

Education is an endeavor aimed at fostering intellectual growth and improving the process of personal development. It drives the changes individuals make to elevate their standard of living, ensuring a well-structured and contextually sound approach to life. Education—whether formal or non-formal—equips individuals to resolve the challenges they face, ultimately leading to better, more positive, and fundamentally sound outcomes.(Boby Helmi, 2017)

Physical education is a form of education designed to improve and manage the body's condition. It is conducted formally in schools through a combination of theory and practice. The goal is to cultivate physical and mental health, based on the principle that a healthy body houses a strong spirit (Nico Febrian Gurning, Devi Catur Winata, Khairul Usman, 2026). Physical education is a multidisciplinary field; its curriculum goes beyond merely physical conditioning to teach activities applicable to daily life. It demands both physical strength and mental aptitude—qualities fostered through lessons covering values such as faith, discipline, teamwork, and personal improvement.



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Because it integrates concepts from various disciplines, physical education is highly valuable and should be a mandatory subject at every educational level and grade, tailored to specific needs and developmental stages. Basketball is one of the activities included in school physical education curricula. It is classified as a "large-ball" game that relies on teamwork to secure a victory. The game involves two teams of five players, each with specific roles; to win, a team must score as many points as possible by shooting the ball into the opponent's basket. (Andi Nur Abady, 2021)

The fundamental techniques of basketball include dribbling, passing, shooting, catching, and rebounding. However, this study focuses on the fundamental technique of basketball dribbling, as the key to the game lies in how the ball is dribbled. Dribbling can be defined as the act of advancing the ball toward the opponent's territory—ultimately to score points by shooting it into the opposing basket—while moving at a running pace; the ball must be bounced against the floor, and the player cannot take more than two steps while carrying it. Dribbling is a fundamental technique that must be introduced to students, as it is crucial for advancing the ball toward the opponent's basket and creating scoring opportunities. Consequently, mastering basic dribbling skills is essential for a basketball team. At SMP Swasta Suci Murni—a junior high school in the Kota Bangun sub-district of Medan Deli—basketball instruction typically follows a conventional format where the teacher provides instructions and the students receive them. However, many 7th-grade students tend to play around with the ball rather than focusing on the lesson. Several factors contribute to this behavior, including an unengaging teaching style, students failing to pay close attention to proper dribbling techniques, and the teacher's methods lacking the ability to fully capture student attention during the learning process. (Munawar, 2022)

The researcher and the teacher sought a solution to this issue, recognizing that if left unaddressed, students would fail to meet the agreed-upon Minimum Mastery Criteria (KKM)—set at 75 for Physical Education classes. Data revealed that only 65% of students in class VIIa achieved mastery in basketball, falling short of the school's target of 85% class-wide mastery. Upon investigating the root cause, they identified a deficiency in basic dribbling skills. Collaborating on a solution, they agreed to utilize audiovisual media to create a more engaging learning experience and foster a better understanding of basketball dribbling techniques. They chose this method because analysis showed that students were more interested when the learning process was not merely one-way but incorporated various media—such as images (Sepdanius & Winata, 2024), audio, and audiovisual content—to address all instructional needs. As the teacher explains, students observe the actual movements and forms of basic dribbling techniques, enabling them to easily grasp the correct execution in accordance with the instructions provided. (Winata et al., 2023)



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Based on the background outlined in the preceding paragraph, the title of this study is “The Influence of Audio-Visual Media on Basketball Learning Outcomes among 7th-Grade Students at SMP Suci Murni Medan for the 2023/2024 Academic Year.”

METHOD

Research Design

This study employs an experimental research method. The experimental method is defined as a systematic approach aimed at investigating the influence of one variable on another through the application of specific treatments and strict controls under defined conditions. The study utilizes a pre-experimental one-group pre-test-post-test design. This design involves a single group that undergoes a pre-test (O), receives a treatment (X), and subsequently takes a post-test. The success of the treatment is determined by comparing the pre-test and post-test scores. In this pre-experimental one-group pre-test-post-test study, the initial step involves selecting the research sample and organizing it into a single study group. The subsequent step entails administering a pre-test to measure basketball learning outcomes. The study design is presented in Table 1.

Tabel 1. Desain *one group pre-test post-test*
Sumber : (John Creswell, 2010: 172)

O1	X	O2
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Keterangan :

O1 : Pre- test

O2 : Post- test

X : treatment

The intervention in this study employs a play-based approach. According to Sukadiyanto, training yields optimal results—specifically a 50% improvement—when conducted over an eight-week period; however, due to time and budgetary constraints, this study will be carried out over a period of five weeks (one month and one week). Participants will undergo the intervention ten times throughout the one-month duration.

Participant

The study population consists of the entire class of Grade VIIa students at SMP Swasta Suci Murni; the total group of 25 students was used as the research sample through the total sampling technique.

Data Analysis

Mansyur (2008: 248) describes data analysis as the activity of organizing, sorting, grouping, coding, and categorizing data so that working hypotheses can be identified and formulated based on the data.

1. Description of Research Results

To describe the pre-test and post-test results, the following formula is used:

2. Prerequisite Analysis Test

$$\frac{\text{Nilai max} - \text{Nilai min}}{1 + 3,3 \log N}$$

Before conducting a hypothesis test, a prerequisite test is conducted. The prerequisite test consists of a normality test and a data homogeneity test.



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3. Hypothesis Testing

Once the data is collected, the next step is to analyze it. The data analysis technique for analyzing experimental data using a pre-test-post-test design is the t-test. According to Suharsimi (2005: 395), the t-test formula for the pre-test-post-test design is as follows:

$$\text{Where: } t = \frac{\frac{\sum (D^2)}{N}}{N(N-1)}$$

t = t value for correlated samples

D = (difference), the difference between the initial and final test scores for each individual

D = mean of the difference values (mean of D) D^2 = square of D

N = number of research subjects

To determine whether the research hypothesis is accepted or rejected, the calculated t value is compared with the t table at the 5% level. If the calculated t value is greater than the t table, there is a significant or meaningful difference in the study. Therefore, the null hypothesis (H_0) is rejected and the working hypothesis is accepted (H_a).

This study also requires percentage improvement data to determine the progress of extracurricular participants after underhand passing training using the play method. The formula used is as follows:

$$\text{Percentage improvement} = \frac{\text{Mean different}}{\text{Mean}} \times 100\%$$

These results will serve as a reference for future similar research. Thus, the abilities of extracurricular participants will be monitored through the research data.

RESULTS AND DISCUSSION

Results

The description of the research data serves to facilitate the interpretation of the data. This description encompasses the pre-test and post-test data from the study. This chapter presents the research data—specifically the pre-test and post-test results regarding the basketball dribbling skills of Grade VII students at Suci Murni Private Junior High School—in detail. The data obtained are described below:

The pre-test data description is based on measurements taken prior to the administration of the intervention. Descriptive analysis of the basketball dribbling skill pre-test data yielded a maximum score of 25, a minimum score of 10, a mean of 17.60, a median of 17.50, a mode of 15.00, and a standard deviation of 4.45. The resulting frequency distribution table is presented below. Following the method outlined by Sudjana (2002: 47), the calculations are as follows: number of class intervals = $1 + 3.3 \log N = 1 + 3.3 \log 20 = 5$; range = maximum score – minimum score = $25 - 10 = 15$; and class width = range / number of class intervals = $15 / 5 = 3$.

Tabel 4.2 Distribusi Frekuensi Data Pre Test

No	Kelas Interval	Frekuensi	Frekuensi
	Relatif	Frekuensi	
	Kumulatif		
1	10 – 13	4	20.00%
2	14 – 17	10	30.00%
3	18 – 21	5	25.00%
4	22 – 25	5	25.00%
5	26 – 29	0	0.00%



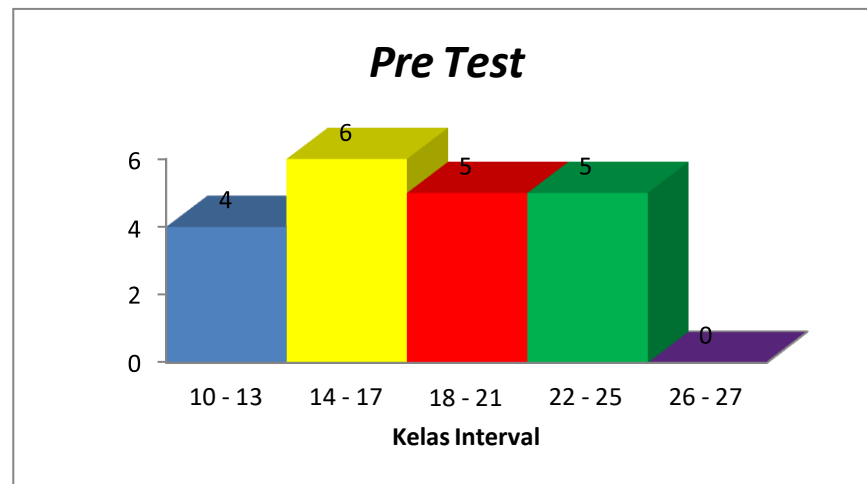
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Jumlah 20 100,00%

If depicted in histogram form, the following is a histogram of the frequency distribution of pre-test data



The description of the post-test data is based on results obtained from the post-test measurements. Descriptive analysis of the basketball dribbling ability post-test data for Grade VII students at Suci Murni Private Junior High School yielded the following results: a maximum score of 29, a minimum score of 14, a mean of 21.10, a median of 22.00, a mode of 22.00, and a standard deviation of 3.67. Following the method outlined by Sudjana (2002: 47), the calculations were as follows: number of class intervals = $1 + 3.3 \log N = 1 + 3.3 \log 20 = 5$; range = maximum score – minimum score = $29 - 14 = 15$; and class width = range / number of class intervals = $15 / 5 = 3$. The resulting frequency distribution table is presented below.

Discussion

This study aims to determine the effect of audiovisual media on basketball dribbling learning outcomes among 7th-grade students at SMP Swasta Suci Murni during the 2023/2024 academic year. The research results indicate a significant effect on basketball dribbling learning outcomes through the use of audiovisual media.

T-test analysis shows that the calculated t-value exceeds the t-table value, indicating a significant difference between the pre-test and post-test results; this demonstrates a significant impact of audiovisual media on the basketball dribbling learning outcomes of 7th-grade students at SMP Swasta Suci Murni in the 2023/2024 academic year. The mean score for the pre-test was 17.60, while the mean score for the post-test was 21.10. These results show that basketball dribbling performance among 7th-grade students at SMP Swasta Suci Murni improved by 3.50 points—or 19.89%—following training with audiovisual media. Thus, it can be stated that the training provided an effect of 19.89%.

The research results indicate that after training using the play-based method, students' underhand passing ability improved significantly—specifically by 19.89% compared to the level prior to the training. This represents a very positive development for the 7th-grade students at SMP Swasta Suci Murni. The impact of the play-based training method was substantial, amounting to nearly 20%. This



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signifies that play-based dribbling training is highly effective; consequently, it is hoped that audiovisual media can be widely adopted for dribbling training.

CONCLUSION

Based on the hypothesis testing and the discussion of the research findings, it can be concluded that audiovisual media has an influence on basketball dribbling learning outcomes among Grade VII students at SMP Swasta Suci Murni during the 2023/2024 academic year.

ACKNOWLEDGMENT

The author would like to thank the school, teachers and students of State Junior High School Suci Murni, the researchers and authors who have participated and provided support for this research activity.

AUTHOR CONTRIBUTION STATEMENT

This research was conceptualized and designed by Radika Triza Mahmuda, who developed the research objectives and methodology, managed data collection, coordinated with participants, and supervised fieldwork at STOK Bina Guna Medan. Devi catur winata performed data analysis, interpreted the findings, and contributed significantly to the preparation of the manuscript. All authors participated in the revision of the manuscript, approved the final version for submission, and take full responsibility for the integrity and accuracy of the work.

CONFLICT OF INTEREST AND FUNDING

The authors declare no conflict of interest related to the conduct, authorship, or publication of this study.

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