

## Improving Basketball Passing Techniques through a Problem-Based Learning Approach

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### ABSTRACT

This study aims to enhance passing technique skills in basketball using a Problem-Based Learning (PBL) model at SMA Negeri 11 Medan, incorporating audio-visual media. Employing a quantitative method, the study involved a population and sample of 36 students from Class XI IPA 1 at SMA Negeri 11 Medan. The variables in this research include the Problem-Based Learning (PBL) model, audio-visual learning media, and learning outcomes. The results of the independent t-sample test showed a significance value of 0.000, which is less than 0.05, indicating a significant difference between the learning outcomes of students using the PBL model and those using conventional learning methods. The average score of students using the PBL model was 83.89, while the average score of students using conventional learning methods was not reported in this paragraph.

**Keywords:** Problem-Based Learning (PBL), Basketball passing techniques, Audio-visual learning media, Quantitative research



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## 1. INTRODUCTION

Sport encompasses a systematic process involving all activities and efforts aimed at fostering, developing, and nurturing an individual's physical and spiritual potentials, both individually and collectively within society. This is achieved through games, competitions, and intensive physical activities intended for recreation, victory, and peak performance, ultimately contributing to the comprehensive development of quality human beings in Indonesia, aligned with Pancasila. According to Article 1 of Law No. 3 of 2005 on the National Sports System, sports encompass all aspects related to physical activities that necessitate regulation, education, training, coaching, development, and supervision. Article 4 further specifies that sports activities are systematic efforts to encourage, nurture, and develop physical, mental, and social potentials. Educational sports are categorized into three main types: physical education, recreational sports, and performance sports.

Within these categories, physical education, also known as physical education (PE), refers to the process of organic, neuromuscular, intellectual, socio-cultural, emotional, and aesthetic adaptation and learning, which results from the selection of various physical activities (James A. Baley and David A. Field, 2001). Physical education, sports, and health constitute a subject offered at certain educational levels, forming a crucial component of the overall education system. This subject emphasizes physical activities and the promotion of healthy living to foster balanced physical, mental, social, and emotional growth and development (Depdiknas, 2006:131).

According to Permendiknas No. 22 of 2006, the objectives of physical education include developing self-management skills for maintaining physical fitness and healthy living through selected physical activities and sports, enhancing physical growth and psychological development, improving basic motor skills, establishing a foundation of strong moral character through the internalization of values inherent in physical education, sports, and health, and fostering attitudes of sportsmanship, honesty, discipline, responsibility, cooperation, self-confidence, and democracy. Physical education is

implemented based on the national education system as outlined in Law No. 20 of 2003 on the National Education System.

Law No. 20 of 2003 on the National Education System defines education as a conscious and planned effort to create a learning environment and learning process that enables students to actively develop their potential, personality, intelligence, noble character, and the necessary skills for themselves, society, and the nation. This law provides basic knowledge and skills for living in society and preparing students for further education. According to Article 1, Clause 8, of this law, educational levels are determined based on the developmental stages of learners, the objectives to be achieved, and the capabilities developed. The formal education levels in Indonesia consist of basic education, secondary education, and higher education.

One level of formal education under observation and research is secondary education, which is provided for graduates of basic education and prepares students to become active members of society who can interact reciprocally with their socio-cultural and natural environments. Secondary education further develops students' skills for the workforce or higher education. The duration of secondary education is three years and includes General Senior High Schools, Vocational Schools, Religious Schools, Government Schools, and Special Education Schools (Law No. 20 of 2003).

At SMA Negeri 11 Medan, physical education is implemented through the subject known as Physical Education, Sports, and Health. This subject includes several core competencies that students are expected to master. One such competency is basketball instruction. Basketball is a sport that requires precise timing and speed in both foot and hand movements. Training in basketball involves developing and honing individual skills, physical fitness, emotional control, and team balance in both defensive and offensive positions (Kosasih, 2008: 2). Basketball is fundamentally a team sport, initially consisting of nine players per team, which later evolved to seven and finally to five players per team.

Basketball is a crucial component of the physical education curriculum at the high school level. Based on interviews with physical education teachers at SMA Negeri 11 Medan, it was found that students have not yet mastered proper passing techniques. Despite repeated instruction, student performance in this area remains unsatisfactory. One contributing factor is the ineffective use of teaching models. Out of a sample of 36 students, initial test results showed that only 6 students (16.66%) achieved competency, while 30 students (83.33%) did not meet the required standards.

In response to the identified issues, the researcher implemented the problem-based learning (PBL) model to enhance students' basketball passing skills. The PBL model emphasizes using problems as initial data to be further investigated. This approach involves gathering data through a structured process, which is then combined into accurate information with the assistance of relevant knowledge sources (Aji, Margono, & Adirahma, 2023). The selection of this teaching model was based on its ability to encourage students to think critically, be active, and creative, while also enhancing their analytical skills. It helps students identify, investigate, and solve problems derived from learning materials within the pre-established curriculum. In this context, the focus is on improving students' passing techniques in basketball.

## 2. RESEARCH METHOD

Quantitative research, grounded in positivism, is employed to study specific populations or samples. The objective of this research is to test the established hypotheses by analyzing data quantitatively or statistically (Sugiyono, 2012). Quantitative research utilizes quasi-experiments to determine the impact of specific treatments under controlled conditions. In this design, comparisons are made between two experimental groups and a control group. This approach does not employ randomization, as the classes used for the experiments are pre-existing (Sugiyono, 2015: 107).

The week prior to the research commencement, both the experimental and control groups engaged in pre-testing activities. In the experimental group, a Problem-Based Learning (PBL) instructional model was employed, utilizing audio-visual media for two-hour sessions per meeting. Conversely, the control group adhered to a conventional instructional model with the same duration per session. Subsequent to the instructional activities, a post-test evaluation was conducted in both experimental and control groups to assess the final outcomes. It was ensured that the participants' learning outcomes met at least the minimum passing grade, thereby indicating the effectiveness of

employing the PBL instructional model through audio-visual media in teaching basketball passing techniques.

### 3. RESULTS AND DISCUSSION

This research aims to determine the extent of the influence of the problem-based learning (PBL) model on the results of basketball passing techniques. The data in this study includes pretest and posttest data. The research data were processed using t-tests with SPSS 16 software and analyzed to determine the results of normality tests and t-tests to identify any significant differences between the pretest and posttest, thereby measuring the improvement in learning outcomes using PBL.

The subjects of this study were students of class XI MIPA 1 as the control group using the traditional passing learning model and students of class XI IPA 1 as the experimental group using the PBL model. The sequence of activities conducted by the researchers included: (1) Pretest data collection to assess the students' initial abilities before intervention. The pretest involved all students as samples performing the passing technique from the starting point to the execution stage, which includes footwork, finger tips bouncing the ball, and follow-through; (2) Instruction using the Problem-based Learning model for students in class XI IPA 1; and (3) Posttest data collection at the end, performed in the same manner as the pretest data collection.

The results of the independent sample t-test indicate a significance value of 0.000, which is less than 0.05. This signifies a difference between the learning outcomes of students using the problem-based learning (PBL) model and those using the conventional learning model. Descriptive statistics further reveal that the average learning outcome for students using the PBL model is 83.89, while the average for students using the conventional model is 76.28. The difference in the average learning outcomes between the PBL model and the conventional model is 7.61.

Based on the analysis of the research data obtained, the implementation of the PBL model for passing material through audio-visual media has a significant impact on the learning outcomes of basketball passing techniques among students in class XI IPA 1 at SMA Negeri 11 Medan. From the data results, it can be concluded that there is an improvement. The PBL model with the assistance of audio-visual media can be effectively used for teaching basketball passing techniques in physical education classes. This is because the PBL model promotes greater student independence. In the passing learning process, students are required to collaborate in groups and thoroughly understand the material to correctly practice the passing technique. The improvement observed between the pretest and posttest is attributed to the PBL model encouraging students to analyze a given problem more extensively. While some students practice the passing technique, others analyze the passing movements from execution to completion, allowing them to identify errors in the technique. Additionally, students practice how to perform the passing technique correctly, following a structured implementation guided by the teacher (researcher), and engage in feedback with their peers. Thus, through PBL, students gain a better understanding of how to effectively practice the passing technique.

### 4. CONCLUSION

Based on the results of this study, the use of the Problem-based Learning in passing technique learning model with Audio Visual Media significantly influences the improvement of passing technique learning outcomes for grade XI students at SMA Negeri 11 Medan. This is demonstrated by the following findings:

- a. The learning outcomes for the passing technique using the Audio Visual Media learning model increased significantly.
- b. The learning outcomes for the passing technique using the Audio Visual Media learning model showed a significant improvement.
- c. Based on the percentage increase in passing technique learning outcomes, the Audio Visual Media learning model is more efficient compared to the traditional passing technique learning model.

There are several recommendations to improve student learning outcomes in basketball instruction for the future: (1) Students should be diligent and engaged during the learning process to enhance their performance. They are also encouraged to be more active during lessons, (2) Educators should consider using the Problem-Based Learning (PBL) model, which has a positive impact on student learning outcomes. Teachers must pay attention to and guide students during the implementation of the PBL model to effectively overcome any obstacles that may arise, and (3) Schools should support the

ongoing learning activities by providing the necessary facilities and resources, including projectors (LCD), whiteboards, markers, speakers, student textbooks, teacher guides, and practical equipment.

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