Problem based learning model: Can it improve learning outcomes of long serve in badminton?

by Didi Suryadi

Problem-based learning model: Can it improve learning outcomes for long serve in badminton?

*[1abcd]Didi Suryadi [ID], [1abc]Y Touvan Juni Samodra [ID], [1abd]Uray Gustian [ID], [1ab]Ghana Firsta Yosika [ID], [1ab]Putra Sastaman B [ID], [2de]Rezza Dewintha [ID], & [1abc]Eko Saputra

[1]Department of Sports Science, Faculty of Teacher Training and Education, Universitas Tanjungpura, Pontianak, Indonesia
[2]Department of Nutrition and Dietetics, Politeknik Kesehatan Kementerian Kesehatan Pontianak, Pontianak, Indonesia

ABSTRACT

This study aims to prove the improvement of learning outcomes from long service techniques in badminton games through problem-based learning models. The type of study used is the classroom action research design. The subjects of this study were students of Senior High School 2 Sukadana in the 2021–2022 school year, especially class X IPA students, totaling 25 students. The results showed an increase in cycle I, namely 28% completion, but there were still many students who were not complete, with a percentage of 72%. Based on the results in cycle II, it shows that there is a difference in the percentage achieved, namely, in cycle I, 28% of students are complete, and the last in cycle II shows a percentage of 92% of students are complete on the learning outcomes of the badminton long serve. The conclusion proves that the problem-based learning model can improve long-term service skills in badminton game. This research has provided new references related to physical education learning, where these results recommend that the problem-based learning model can be applied to solve badminton long serve problems.

Keywords: Problem-based learning; long service; badminton

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INTRODUCTION

Sport is a physical activity that can be done by everyone, including children and the elderly (Suryadi et al., 2022), because it is needed for human physical development and growth (Suganda, 2017), and the development of talent in sports (Saputra & Wahyudi, 2022). As a result, it is critical to engage in sports activities in order to meet physical needs. Some studies prove that physical activity through sports has a positive impact on physical fitness (Baek et al., 2020; Golubović et al., 2012; Suryadi, 2022; Suryadi et al., 2021; Suryadi & Rubiyatno, 2022). The review article illustrates the importance of exercise in everyday life, as it has a positive influence on health (Meo et al., 2021). Therefore, learning sports through physical education is applied to the school environment.

Physical education is one of the compulsory subjects taught in elementary, junior high, and senior high school environments (Rubiyatno & Suryadi, 2022), and is an important aspect of student growth (Iyakrus, 2019). In addition, physical education learning is an important point for achieving students' academic success (Budi & Listiandi, 2021). This statement is reinforced by Suryadi and Rubiyatno (2022), where character building is essentially assisted through physical education. Furthermore, teachers play an important role in motivating and facilitating sports learning at school. One of the subjects offered in physical education is the sport of badminton (Rubiyatno & Suryadi, 2022).

Two players or four players compete against one another in the game of badminton with the goal of putting the shuttlecock into the opposing team's area over the net (Pambudi, 2020; Triaiditya et al., 2020). To enter the ball into the opponent's area, of course, you must have good technique. A study by Rambitan (2020) said serving is the main technique that badminton players must learn in order to make a start in the game. In addition, in badminton games, the serve is divided into two types, including short serves and long serves. The short serve is a prefix movement that is carried out by hitting the shuttlecock in the direction of its fall close to the net (Setiawan & Dermawan, 2014), and the long serve is a prefix that is usually done using a forehand shot where the shuttlecock soars above and falls away from the net (Rubiyatno & Suryadi, 2022).

The review came to the conclusion that badminton is a game where players try to get the most numbers, or points, in a match. By serving well, this has a positive influence on the game (Yane, 2016). As a result, selecting the right training to improve your serving in badminton games is critical. It turns out that doing continuous and interval training has an influence on badminton serving techniques (Sumintarsih & Saptono, 2022). Furthermore, low-target practice is effective for improving badminton long serves (Ayuningrum et al., 2021). Based on this, doing various kinds of exercises can affect the ability to serve techniques in the game, where serving is one of the success factors in the game.

Based on the results of preliminary studies and observations made by researchers and the physical education teacher at Senior High School 2 in Sukadana, there are still many students who have difficulty serving long badminton games. Most likely, the lack of variety in learning is one of the contributing factors (Sanjaya et al., 2021). Even though Hulu et al. (2020); Luo (2019); and Prabandaru et al. (2020) used the problem-based learning model to teach badminton game skills in physical education, and Yane (2016). However, the application of the problem-based learning model in this study was carried out in different schools, and this research has never been carried out in physical education. In addition, the impact of the COVID-19 pandemic has led to the emergence of new regulations in various sectors, including education, which require schools to conduct online learning (Muhammad & Setiawan, 2022). So that is one of the challenges of applying the problem-based learning model to learning physical education long-service material where students are accustomed to learning online. Therefore, researchers are interested in using the problem-based learning model to find out the extent of its effectiveness and, at the same time, the reason for the importance of this research. Based on this, this study aims to prove whether the problem-based learning model can improve the learning outcomes of long-serve badminton games.

METHOD

Classroom action research (classroom action research) has several cycles by going through the stages of action planning, implementation, observation, and reflection (Arikunto, 2017). The subjects used in this study were all class X IPA students at SMA

Negeri 2 Sukadana for the 2021-2022 academic year, consisting of 25 students. The research was carried out in class "X" IPA of SMA Negeri 2 Sukadana for physical education subjects with the subject matter of long serve badminton games.
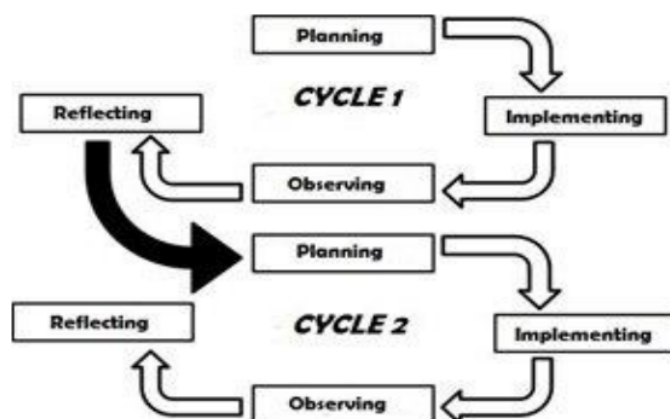

Figure 1. Classroom Action Research Design

The primary data in this study is the value of the evaluation results of Pre-cycle, Cycle 1 and Cycle II by classifying values with complete and incomplete criteria. In order to help the smooth learning improvement research, the authors asked for the help of supervisor 2 to make observations in the learning process carried out by researchers. In this study, we used the Learning Implementation Plan (RPP) as the main analysis tool, and periodic note testing as a data processing tool. During this program, students will receive long service instruction using a problem-based learning model. In the Classroom Action Research study it will be divided into two cycles, with each cycle having four steps, namely: planning, action, observation and reflection for planning the next (Maksum, 2018). Furthermore, the analysis in this research is descriptive with the help of Microsoft Excel 2019 software.

RESULTS AND DISCUSSION

Based on the results of a study conducted on class X students of SMA Negeri 2 Sukadana consisting of 6 male students and 19 female students with a total of 25 students. To obtain this data, the first research was carried out on a long serve skills performance test in badminton.

Table 1. Frequency Distribution

Cycle	Number of Students	Percentage (%)
Pre-Cycle	3	12%
Cycle I	7	28%
Cycle II	23	92%

In table 1 above, it can be seen that pre-cycle students who meet the minimum completeness criteria (KKM) are only 3 students with a percentage of 12%; there are 7 students in cycle I who are complete with a percentage of 28%; and in cycle II, students who meet the minimum completeness criteria (KKM) are 23 students with a percentage of 92%.

Table 2. Differences in Student Learning Outcomes Using the Problem-Based Learning Model

Goals	Pre-Cycle	Cycle I	Cycle II	Description
Completed	3-(12%)	7-(28%)	23-(92 %)	Improvement
Not Completed	22-(88 %)	18-(72%)	2-(8%)	
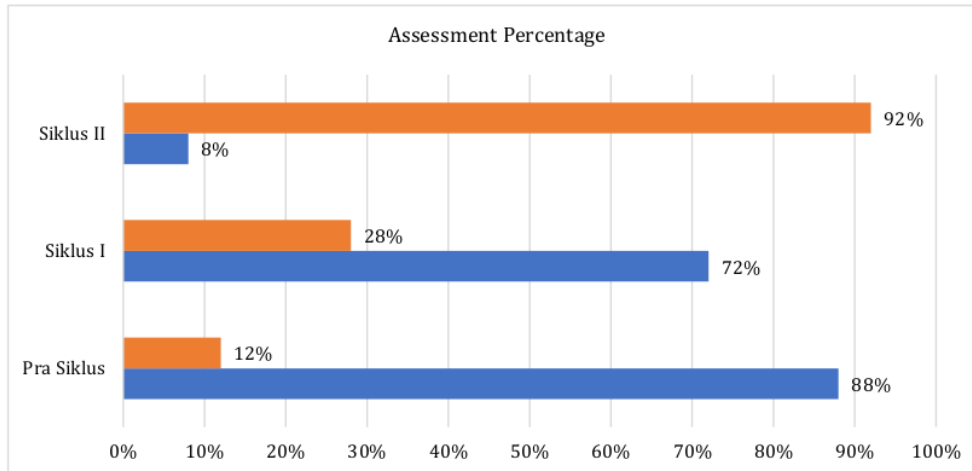
Graph 1. Percentage difference assessment

This study aims to prove whether the problem-based learning model provides an increase in learning outcomes for long service techniques in badminton games. The results showed an increase in cycle I, namely 28%, but there were still many students who were not complete, namely 72%. Seeing that there are still many students who do not meet the minimum completeness criteria (KKM), cycle II is continued. Based on the results in cycle II, it shows that there is a difference in improvement, namely from the pre-cycle of 12%, followed by cycle I of 28%, and in cycle II, a percentage of 92% of students completed the long-term skills of badminton games. The results of previous relevant research also show an increase using the problem-based learning model (Yane, 2016). Another study found a significant increase in volleyball passing techniques with problem-based learning (Prayoga, 2021).

Furthermore, through the problem-based learning model, it turns out to provide an increase in badminton game service skills (Prabandaru et al., 2020). Other research proves that the problem-based learning model can also improve the learning outcomes of badminton forehand shots (Hulu et al., 2020). In addition, several studies have proven that the problem-based learning (PBL) model can improve critical thinking skills in students (Annisa et al., 2021; Nafiah & Suyanto, 2014; Suswati, 2019). Based on the above statement, it provides evidence that the problem-based model is effective for being applied to learning in a school environment, so that it will create students who are able to have independence and the ability to think critically about learning.

The results of the research that has been carried out prove a high increase in learning the long serve of badminton games by using the problem-based learning method. Based on the research findings, it can be concluded that the classroom action research carried out achieved the expected target plan objectives, where students were more enthusiastic in the learning process and actively involved students. Therefore, the problem-based learning model has a significant effect on learning outcomes in physical education (Parwata, 2021).

Based on the theory and preliminary studies that have been conducted, the problem-based learning model can be used as one of the learning models that can be applied to students to solve problems in learning. This statement is in line with previous research that proves an increase in learning outcomes in physical education through problem-based learning (Luo, 2019). Apart from being carried out in physical education, several studies have proven that problem-based learning provides an improvement in learning mathematics in elementary schools (Asriningtyas et al., 2018; Fauzia, 2018; Syamsimar, 2021), and that learning begins with a problem that must be solved (O'Brien et al., 2011).

Furthermore, the problem-based learning model on the material of appreciation of historical relics is a solution to problems in the learning process (Musdiani, 2018). Another study on economic learning found that the problem-based learning model also had a significant effect (Qomariyah, 2019), and another study proved that applying the problem-based learning model with learning motivation can have an effect on entrepreneurial attitudes (Munawaroh, 2020). The results of these studies again provide evidence that the problem-based learning model is very suitable to be applied in learning. In addition, a finding has recommended the problem-based learning model be applied in physical education (Luo, 2019).

CONCLUSIONS

The results of the research and discussion have a strong foundation related to improving badminton long serve skills through problem-based learning models. These results are strengthened by the previous references listed in the discussion results. The results showed a difference between pre-cycle, cycle I, and cycle II, namely an increase in each cycle; this result can be seen from the percentage of the average value. The results prove that the problem-based learning model can improve the learning outcomes of students' long serve badminton skills. The results of this study certainly provide a new reference in physical education learning so that it can be applied in the learning process. The weakness in this study is that the sample used was relatively small and was only done in one class. Future research recommendations can compare the effectiveness of problem-based learning models in physical education, which certainly uses a wider population and sample.

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