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Implementation of *Project Based Learning* model to improve learning outcomes of basketball material

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ABSTRACT

This study was conducted in order to determine the application of the *project-based learning* model in improving learning outcomes in basketball material. This type of research is classroom action research, with the implementation of the research consisting of 2 cycles. The subjects of this research are students of class XI IPA 6 SMA Negeri 7 Bengkulu, while the object of this research is the material of big ball games (basketball) with the application of *project-based learning*. Data was collected by observing the basic basketball technique movements with the basketball basic technique *assessment* format on psychomotor aspects, cognitive aspects and affective aspects. The data analysis technique uses descriptive statistical analysis. In cycle 1 there was an increase of 10 people (27.8%) to the complete category and in cycle II it increased again to 14 people (38.8%) in the complete category The overall results show that the application of the *project-based* learning model *(PjBL)* in learning physical education can improve student learning outcomes on the material of big ball games and also the learning process becomes more meaningful because it is student-centered.

INTRODUCTION

Education is a learning process for students to know, evaluate and apply any knowledge provided in classroom learning or experiences that occur in everyday life. (Laili et al., 2019) and is a process of transferring knowledge information from teachers to students (Munna & Kalam, 2021). The information transfer process is organized in such a way by *stakeholders*, in this case the Ministry of Education, Culture, Research and Technology in an academic paper in the form of a strategic plan that contains the implementation of character education at all levels of education units from early childhood education to higher education. (Ministry of Education and Culture, 2020). Character education that is implemented in the world of education is expected to overcome the moral and character crisis. (Hamidah, 2020) as well as improving the quality of Human Resources (HR) increases (Qutni et al., 2021). (Qutni et al., 2021).

To achieve optimal learner learning outcomes, it is necessary to improve the quality of learning and learning support tools which include educators. (Safitri et al., 2022)(Safitri et al., 2022), curriculum and facilities and infrastructure. Improving the quality of education means a process that must be carried out seriously and seriously and integrated with the process of improving the quality of human resources itself. (Puspita & Sugiyono, 2021). Physical education, sports and health are subjects that are very important for students to learn in this day and age, because with knowledge about health and sports practices, students can fortify themselves in one way, namely increasing endurance or immunity. (Hidayat & Sujarwo, 2022; Sugihartono, 2019)..

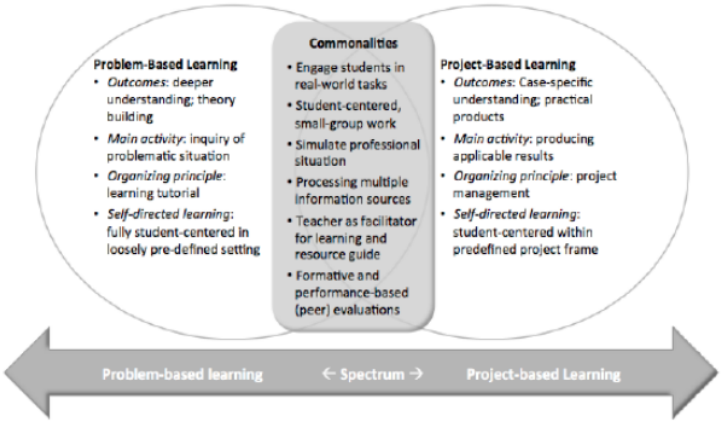
The purpose of physical education learning in schools is to develop aspects of physical fitness, moral actions and aspects of healthy living for students. (Raibowo et al., 2019; Riski & Candra, 2022).. The objectives expected by the government through physical education subjects include helping the learning process of movement, forming movement skills to be more active, forming students to think critically and making students fitter (Taqwim et al., 2019; Riski & Candra, 2022). (Taqwim et al., 2020).. In order for the process of achieving these goals to run optimally, a competent and professional teacher is needed who has an important role in the learning process. With the rapid development of Science and Technology (IPTEK), teachers are required to master various competencies and use a technological approach (Anshori, 2016; Prabowo, 2016). (Anshori, 2016; Prabowo et al., 2022) and various learning models in every aspect of learning (Mashud et al., 2022).. The learning model in question is a learning model that involves students in an active, creative and fun way. (Muskania & Wilujeng, 2017)..

A learning model is a plan or pattern that can even be used to form a curriculum (long-term learning plan), design learning materials, and guide learning in the classroom or other learning environments. (Suwardika et al., 2022).. However, the reality that occurs in the field, becoming a professional physical education teacher is not as easy as imagined. One of the findings obtained from observations at school is that the learning outcomes of physical education subjects on the material of big ball games (basketball) are 1) students are still found who perform basic basketball technique movements that are not optimal, so that the delivery of basic basketball technique material delivered by the teacher has not been mastered properly by students; 2) the results of students' answers during daily tests are on average below the Minimum Completion Criteria (KKM) determined by the school, as a result of which learning activities on the material of big ball games (basketball) have not run optimally. The results of daily tests obtained in a class of 36 people, consisting of 16 boys and 20 girls found that only 11 people (2.8%) of students were complete and 25 people (69.5%) of students were not complete on the material of big ball games (basketball). These findings indicate that the learning process is not optimal. This condition is also caused by the lack of interaction between teachers and students and between students, the lack of supporting sports facilities and infrastructure such as the number of basketballs that are suitable for use less than the number of students, besides that the teacher is still the main source of learning for students.

(Raibowo & Nopiyanto, 2020)the learning model used is not varied (Darsana et al., 2021) and do not use technological approaches as learning media (Suryaningsih et al., 2021).

One way to overcome these problems is to use the *Project Based Learning* (PjBL) learning model. The project-based learning (PjBL) model refers to an inquiry-based learning method that involves students in constructing knowledge through the completion of a project (Brundiers & Wiek, 2013). (Brundiers & Wiek, 2013).. *Problem-based learning & project-based learning* approaches have many similarities, but give different emphasis on several main aspects of *outcome, main activity, organizing principle & self-directing learning*.

A series of PBL and PjBL learning approaches (Brundiers & Wiek, 2013)



In Figure 1, explaining the similarity between PBL and PjBL is that the process involves students as the main actors, the approach is student-centered and is carried out by making small groups, the information obtained is processed and reviewed in small groups, the teacher is only a facilitator and guide and the evaluation is performance-based (formative). The main characteristic and the "power and spirit" of *Project Based Learning (PjBL)* is the existence of real-world problems (really happening) which are raised into scenarios and learning activities, and the role of students is as experts, who design / develop solutions and products to overcome / solve these real problems. (Yanti & Novaliyosi, 2023)..

The PjBL learning model on learning outcomes in physical education subjects has been proven through previous research. Learning motivation increases using *Project Based* Learning (Nr et al., 2022) through vlog media on aerobic gymnastics material (Zaeriyah, 2022). The learning method using the PjBL approach is proven to have an effect on improving the achievement of physical education learning outcomes (Haikal & Indahwati, 2022). (Haikal & Indahwati, 2022).. Implementation of the *project-based learning* model can further increase activeness (Perdana, 2022). (Perdana, 2022) and students' creative thinking (Febriyanti et al., 2020).. This study aims to analyze the PjBL learning model to

improve physical education learning outcomes on the material of big ball games (basketball).

METHODS

The research method uses *applied* research, with a Classroom Action Research approach. Classroom action research (PTK) is an effort by reflective educators to improve the quality of their teaching so that student learning is also getting better. (Kusumarasdyati, 2016). PTK is actually a routine work carried out by teachers to improve the quality of learning. (Noermanzah, 2021). This research was conducted in two cycles. The first cycle was carried out to get an overview of the problems experienced and obstacles during the learning process using the PjBL model. The second cycle includes the results of the first cycle reflection which is used as the basis for improvement in cycle II.

The subjects in this study were students of class XI IPA 6 SMA Negeri 7 Bengkulu, while the object of this research was the material of big ball games (basketball) with the application of *project-based learning* models. Data was collected by observing the basic basketball technique movements with the basketball basic technique *assessment* format on psychomotor aspects, cognitive aspects and affective aspects.

The data analysis technique uses descriptive statistical analysis. This method is a way of processing data carried out by applying descriptive statistical formulas such as frequency distribution, *mean to* describe the state of a particular object so that general conclusions are obtained. (Kaliyadan & Kulkarni, 2019). Meanwhile, to determine the number of students who are complete in carrying out learning, the following formula is used;

$$ketuntasan\ belajar = \frac{Jumlah\ siswa\ yang\ tuntas}{jumlah\ seluruah\ siswa} x\ 100\%$$

RESULTS AND DISCUSSION

The improvement of learning outcomes in *cognitive* aspects on the material of big ball games (basketball) from initial observations, cycle I and cycle II can be seen through table 1 below.

Table 1. Improvement of *Cognitive* Aspect Learning Outcomes of Learners

No.	Stages	Classical *Cognitive* Aspect Learning Outcomes	Learner Completion	Improved Learning Outcomes	
				Initial Observation to Cycle I	From Cycle I to Cycle II
1	Initial Observation	72	10 people (27.8%) Completed	9 people (25%)	
2	Cycle I	76	19 people (52.8%) Completed		15 people (41.7%)
3	Cycle II	82	34 people (94.4%) completed		

Based on Table 1 shows the results of data analysis of learning outcomes of *cognitive* aspects of basic basketball techniques of students in class XI IPA 6 SMA 7 Negeri Bengkulu, it is known that in the initial observation of students who get the category of 10 people (27.8%), after being given action in cycle I students who get the category of 19 people (52.8%) with an increase of 9 people (25%). Then continued with the provision of action in cycle II, students who got the complete category were 34 people (94.4%), with an increase of 15 people (41.7%).

Table 2. Improvement of Learning Outcomes in the *Psychomotor* Aspects of Students

No.	Stages	Classical *Psychomotor* Learning Outcomes	Learner Completion	Improved Learning Outcomes	
				Initial Observation to Cycle I	From Cycle I to Cycle II
1	Initial Observation	70	12 people (33.3%) completed	8 people (22.2%)	
2	Cycle I	74	20 people (55.6%) Completed		13 people (36.1%)
3	Cycle II	80	33 people (91.6%) completed		

Based on Table 2, it shows the results of data analysis on the learning outcomes of the *psychomotor* aspects of the basic basketball techniques of students in class XI IPA 6 SMA 7 Negeri Bengkulu, it is known that in the initial observation of students who got the complete category 12 people (33.3%), after being given action in cycle I, students who got the complete category 20 people (55.6%) with an increase of 8 people (22.2%). Then continued with the provision of action in cycle II, students who got the complete category were 33 people (91.6%) with an increase of 13 people (36.1%).

Table 3. Improvement of Learners' *Affective Asp*ect Learning Outcomes

No.	Stages	Classical *Affective* Learning Outcomes	Learner Completion	Improved Learning Outcomes	
				Initial Observation to Cycle I	From Cycle I to Cycle II
1	Initial Observation	70	11 people (30.5%) completed	10 people (27.8%)	
2	Cycle I	73	21 people (58.3%) Completed		14 people (38.8%)
3	Cycle II	83	34 people (94.4%) completed		

Based on Table 3, it shows the results of data analysis on the *affective* aspects of learning outcomes of students in class XI IPA 6 SMA 7 Negeri Bengkulu, it is known that in the initial observation of students who got the complete category 11 people (30.5%), after being given action in cycle I students got the complete category 21 people (58.3%), with an increase of 10 people (27.8%). Then continued with the provision of action in cycle II, students who got the category completed 34 people (94.4%) with an increase of 14 people (38.8%) from cycle I. The overall results show that PjBL learning helps students to improve the learning outcomes of physical education material for big ball games (basketball).

The learning process begins with providing a video tutorial on basic basketball techniques to students, then students practice it replaced by making a project in the form of a simple movement video about basic basketball techniques. Learning with PjBL helps students to improve cognitive, psychomotor and affective aspects in physical education learning. In learning, to measure and know the extent of what can be achieved by students, educators use learning outcomes. (Djannah et al., 2022). Learning outcomes themselves are changes that occur in students, both concerning cognitive, affective, and psychomotor aspects as a result of learning activities. Cognitive aspects are the basis for developing psychomotor aspects and affective aspects will be realized if the process of psychomotor aspects supported by cognitive aspects runs smoothly. (Raibowo et al., 2020). In order for the cognitive process to run optimally, one solution is to utilize technology into learning (Raibowo et al., 2020). (Raibowo et al., 2022) one of them is using video tutorials (Rahmadri, 2021).

In its implementation, the assignment is given, namely students making video tutorials with basic basketball technique material. The PjBL learning model is *student centered* learning while the teacher serves as a motivator and facilitator which aims to make students innovative in the tasks given. Instructional models such as project-based learning support the development of collaborative and lifelong learning skills, technology use skills, knowledge sharing skills and social networking skills among students. (Al-Busaidi & Al-Seyabi, 2021).. This model directs to the problem directly (Haikal & Indahwati, 2022). Then students must think creatively and act so that the project-based task can be completed. Creative thinking skills can be developed through the fulfillment of creative thinking aspects such as *fluency, flexibility & elaboration* so that ideas can grow and be developed. (Birgili, 2015).

Thinking *fluently (fluency)* in this aspect learners will solve their problems in accordance with the requirements that the teacher provides starting from the theme, conditions, and content or content. In its implementation, students are given the theme of what tasks will be given, namely in the form of individual video assignments. Then, given the conditions that must be in the video, the last collection date and the content or content given in the task. The task contains basic basketball technique skills with material that has been determined according to the theme at the beginning.

Then think *flexibly* to generate problem-solving ideas. In this aspect, students are given a little discussion to complete the task. It is intended that there is mutual interest or openness to each other in

the discussion, so that students are expected to be able to draw conclusions from the discussion and then create ideas that are solving of course from the thoughts of each student.

Next, think *originality* to provide different ideas. Learners here are given freedom in making the assigned video tutorials, meaning that students are still within the boundaries of the requirements but are free to shape the video according to their own thoughts. Thus, learners are expected to create a project result that is creative and has not been thought of by others. Finally, thinking in detail (*elaboration*) to develop their ideas. Almost the same as original thinking but the difference lies in the development of thinking ideas. Here learners are felt to have been able to create their own ideas, then there is development through several other references through freedom in finding information. So that learners can develop original thinking skills to get a creative project result that has not been thought of by others.

CONCLUSIONS

The application of the *Project-based learning* model (PjBL) in physical education learning can improve student learning outcomes in the material of big ball games (basketball) and also the learning process becomes more meaningful because it is *student* centered and flexibility with the conditions that apply in completing projects or tasks given raises ideas and creative thinking processes in students.

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