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Application of problem-based learning (pbl) learning model to improve long jump learning outcomes

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Abstract

This research aimed to improve long jump learning outcomes in class X 1 students of SMA Negeri 2 Tabanan by applying the Problem-Based Learning learning model. This type of classroom action research was carried out in two cycles: action planning, implementation, observation, and reflection. The research subjects were class X 1 students of SMA Negeri 2 Tabanan in the academic year 2023/2024. There were 36 students, consisting of 20 females and 16 males. Data were analyzed using descriptive statistical analysis. The results showed that learning outcomes classically experienced a significant increase in the attitude aspect from cycle I of 16.7% increased to 80.6% in cycle II, the knowledge aspect from cycle I of 44.4% increased to 86.1% in cycle II, and the skill aspect from cycle I of 33.3% increased to 80.6% in cycle II. The research concluded that the learning outcomes of the long jump increased through the application of the PBL learning model in class X 1 students of SMA Negeri 2 Tabanan in the academic year 2023/2024. Therefore, this research recommends PE teachers consider using the PBL learning model because it can improve long jump learning outcomes

Keywords: Problem-Based Learning, Learning Outcomes, Long Jump

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Authors' Contribution: A – Conceptualization; B – Methodology; C – Software; D – Validation; E - Formal analysis; F – Investigation; G – Resources; H - Data Curation; I - Writing - Original Draft; J - Writing - Review & Editing; K – Visualization; L – Supervision; M - Project administration; N - Funding acquisition

INTRODUCTION

Education is a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have religious spiritual strength, self-control, personality, intelligence, noble character, and skills needed by themselves, society, nation, and state. Learning is any activity designed by a teacher to help someone learn a new ability or value systematically through the stages of design, implementation, and evaluation. Efforts to improve Indonesia's quality of human resources can be made through physical education, sports, and health subjects.

Physical education is an inseparable part of human life. Physical Education, Sports, and Health (PE) learning has now been implemented at the elementary, junior high, and high school levels. PE is a type of learning involving physical activity movement that forms values, characters, and attitudes carried out consciously in a systematic process. It means that PE is not only a physical development activity but must also be done in the context of general education. Physical education, sports, and health does not only take place in the classroom but also practically outside the classroom (Arya et al., 2023). The process is definitely done

consciously and involves systematic interaction between a teacher and students to achieve overall sports skills.

The most important thing in transferring knowledge is the process because a good, correct, and up-to-date process will determine the achievement of learning goals. Changes in behavior indicate achievement in the learning process. The effectiveness of the learning approach used is a factor affecting the quality of learning outcomes. Therefore, PE teachers need to apply a good and appropriate learning approach that is adapted to the conditions and characteristics of students, active, creative, effective, and fun so that PE learning will run well and learning objectives will be achieved.

Long jump learning is one of the materials included in the independent curriculum in PE subjects. The basic technique of the long jump is the student's motion activity in making a prefix, pedestal, hovering, and landing in the long jump implementation. Considering that mastery of basic long jump techniques is an important part that students must master, a teacher must try to create a conducive environmental system or conditions so that learning activities can achieve goals effectively and efficiently. PE teachers should no longer teach simply as an activity to convey knowledge, skills, and attitudes to students. Still, teachers should teach to teach students in small groups who work together to optimize mastery of what students learn.

Based on preliminary observations made by researchers in the field during the Teaching Assistance to class X 1 students totaling 36 students in learning PE, especially in the long jump sport. Students' learning activities are mostly less active in participating in learning, and the results are that some students cannot perform movements with the correct technique, or it can be said that students' learning outcomes have not achieved learning objectives. Students' completeness level based on learning outcomes in PE lessons is 75. Based on the percentage of student learning outcomes obtained during observation, it can be seen that there are only 14 students (38.9%) in the category of achieving learning objectives and 22 students (61.1%) in the category of not achieving learning objectives. Thus, overall, it can be seen that learning outcomes are low and have not met the learning outcomes in PE subjects. One of the causes of the low learning outcomes in PJOK is that the learning model used by the teacher is less varied and does not involve students in being more active in the learning process.

Inactivity is a cause of low student learning outcomes. It is due to problems that become obstacles when learning takes place. The results of the initial reflection carried out by researchers regarding the PE learning process with long jump material show that it still needs

to be improved. Several factors cause these problems, namely: 1) the teacher lectures too much when providing material, which causes low student learning activity, 2) student learning outcomes are still lacking, as evidenced by the interest and enthusiasm in participating in the ongoing learning process, 3) students only receive material provided by the teacher, and they do not attempt to find information from other sources, 4) when finding problems, students are not able to solve them well, and 5) limited learning facilities cause the learning process to not run well.

Referring to the problem above, the role of a teacher is critical in applying the suitable learning model to encourage students to play an active role in the material provided and students' critical thinking ability. According to Satyawan et al., (2021:137), the learning model is also needed to improve students' learning process effectively. In addition, the learning model chosen must be appropriate and adapted to the conditions that occur (Semarayasa et al., 2022:130). Therefore, this research tried to provide one alternative solution to the problem by applying a cooperative learning model of the Problem-Based Learning (PBL) type. PBL is a learner-centered learning process that provides problems as a context for students to learn critical thinking and problem-solving skills and gain knowledge.

Based on the description above, the researcher felt compelled to conduct a study entitled "Application of Problem-Based Learning (PBL) Learning Model to Improve Long Jump Learning Outcomes in Class X 1 Students of SMA Negeri 2 Tabanan in the Academic Year 2023/2024".

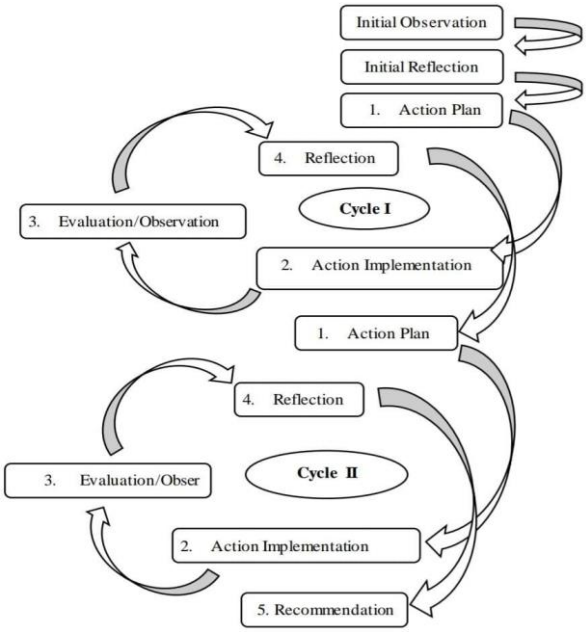
METHOD

The type of research used in this research was Classroom Action Research (CAR), with teachers as researchers, namely teachers who design lesson plans, implement learning, and evaluate the learning process. CAR is research conducted by a teacher in his/her own classroom through self-reflection with the aim of improving his/her performance as a teacher so that students' learning outcomes increase. PTK is a form of research that reflects certain actions to enhance or improve learning practices in the classroom professionally, according to Kanca (2010) in Tanwisastra et al., (2023:294). According to Nurhalimah et al., (2022:25), Classroom Action Research is characterized by certain actions to improve the teaching and learning process in the classroom.

CAR in teaching is one way to make learning more efficient, as seen in students' progress. It aims to improve and refine learning practices that a teacher should carry out. Thus, CAR is one of the strategic ways for a teacher to increase and improve educational services for

a teacher in the context of learning in the classroom. The research was conducted in class X 1 SMA Negeri 2 Tabanan in the academic year 2023/2024 even semester with 36 students consisting of 16 males and 20 females. Research design is a tactic to organize the research environment so that researchers can collect relevant (valid) data according to the characteristics of the variables and research objectives. A plan on how to collect, present, and analyze data to give meaning to the data effectively and efficiently, according to (Kanca, 2010:55).

This Classroom Action Research was designed in two cycles, with each cycle consisting of two meetings. The first meeting provided material and observed student learning activities, while the second meeting provided repetitive and stabilizing material, observed learning activities, and evaluated learning outcomes. Each cycle was designed using two meetings with an allocation of 2 x 45 minutes at each meeting. Thus, the total planned meetings are four times in two planned cycles. Each cycle of this Classroom Action Research (CAR) design consisted of four stages, namely: (1) action plan, (2) action implementation, (3) observation/evaluation, and (4) reflection



RESULT

The research results are observations from the field regarding the process of applying the Problem-Based Learning (PBL) learning model to improve long jump learning outcomes in class X 1 students of SMA Negeri 2 Tabanan

Description of Research Result Analysis Cycle I

The data analysis results of the attitude aspect learning outcomes in the long jump material in class X 1 students of SMA Negeri 2 Tabanan in the academic year 2023/2024 can be seen in the following table.

Table 1. Data Analysis of Attitude Aspect Learning Outcomes Cycle I

No	Learning Achievement Criteria	Category	Number of Students	Percentage	Achievement
1	85-100	Excellent	0	0%	(6 people) 16.7%
2	75-84	Good	6	16,7%	
3	65-74	Fair	5	13,9%	
4	<65	Insufficient	25	69,4%	(30 people) 83.3%
Total			36	100%	100%

Based on the table above, it can be seen that the attitude aspect learning outcomes in the long jump material in class X 1 students of SMA Negeri 2 Tabanan in the academic year 2023/2024 in cycle I, which the achieved category was six students, and the unachieved category was 30 students. With value details of learning outcomes in accordance with the following categories: 0 students with excellent category (0%), six students with good category (16.7%), five students with fair category (14.9%), and 25 students with insufficient category (69.4%).

The data analysis results of the attitude aspect learning outcomes in the long jump material in class X 1 students of SMA Negeri 2 Tabanan in the academic year 2023/2024 can be seen in the following figure.

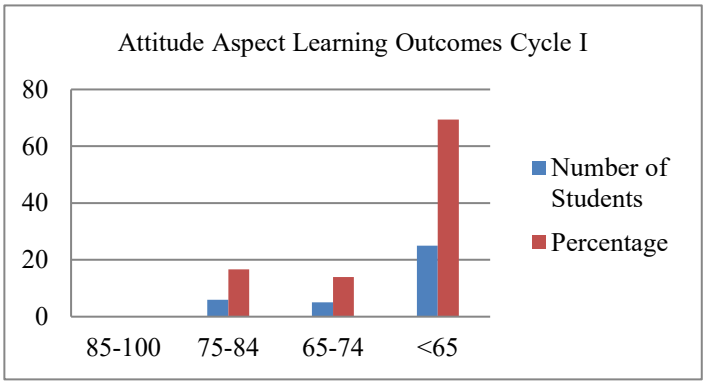


Figure 2. Attitude Aspect Learning Outcomes Cycle I

Description of Research Analysis Results of Knowledge Aspect Learning Outcomes

The data analysis results of the knowledge aspect learning outcomes in the long jump material in class X 1 students of SMA Negeri 2 Tabanan in the academic year 2023/2024 can be seen in the following table.

Table 2. Data Analysis of Knowledge Aspect Learning Outcomes Cycle I

No	Learning Achievement Criteria	Category	Number of Students	Percentage	Achievement
1	85-100	Excellent	1	2.8%	(16 people) 44.4%
2	75-84	Good	15	41.7%	
3	65-74	Fair	14	38.8%	(20 people) 55.6%
4	<65	Insufficient	6	16.7%	
	Total		36	100%	100%

Based on the table above, it can be seen that the knowledge aspect learning outcomes in the long jump material in class X 1 students of SMA Negeri 2 Tabanan in the academic year 2023/2024 in cycle I, which the achieved category was 16 students, and the unachieved category was 20 students. With value details of learning outcomes in accordance with the following categories: one student with excellent category (2.8%), 15 students with good category (41.7%), 14 students with fair category (38.8%), and six students with insufficient category (16.7%).

The data analysis results of the knowledge aspect learning outcomes in the long jump material in class X 1 students of SMA Negeri 2 Tabanan in the academic year 2023/2024 can be seen in the following figure.

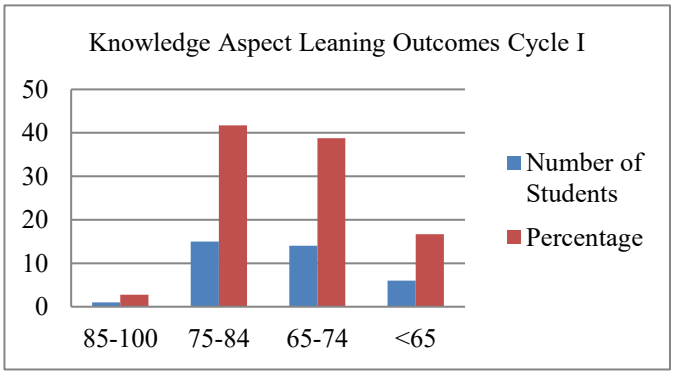


Figure 3. Knowledge Aspect Learning Outcomes Cycle I

Description of Research Analysis Results of Skill Aspect Learning Outcomes

The data analysis results of the skill aspect learning outcomes in the long jump material in class X 1 students of SMA Negeri 2 Tabanan in the academic year 2023/2024 can be seen in the following table.

Table 3. Data Analysis of Skill Aspect Learning Outcomes Cycle I

No	Learning Achievement Criteria	Category	Number of Students	Percentage	Achievement
1	85-100	Excellent	5	13.9%	(12 people)
2	75-84	Good	7	19.4%	33.3%
3	65-74	Fair	9	25%	(24 people)
4	<65	Insufficient	15	41.7%	66.7%
Total			36	100%	100%

Based on the table above, it can be seen that the skill aspect learning outcomes in the long jump material in class X 1 students of SMA Negeri 2 Tabanan in the academic year 2023/2024 in cycle I, which the achieved category was 12 students, and the unachieved category was 24 students. With value details of learning outcomes in accordance with the following categories: five students with excellent category (13.9%), seven students with good category (19.4%), nine students with fair category (25%), and 15 students with insufficient category (41.7%).

The data analysis results of the skill aspect learning outcomes in the long jump material in class X 1 students of SMA Negeri 2 Tabanan in the academic year 2023/2024 can be seen in the following figure.

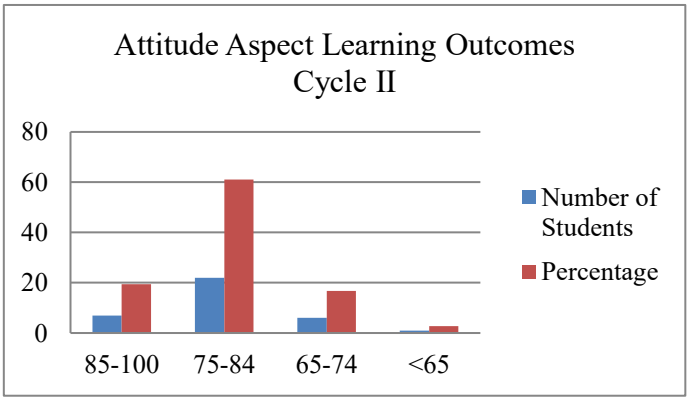


Figure 5. Attitude Aspect Learning Outcomes Cycle II

Description of Research Analysis Results of Knowledge Aspect Learning Outcomes

The results of data analysis of the knowledge aspect learning outcomes through the long jump material in class X 1 students of SMA Negeri 2 Tabanan in the academic year 2023/2024 can be seen in the following table.

Table 5. Data Analysis of Knowledge Aspect Learning Outcomes Cycle II

No	Learning Achievement Criteria	Category	Number of Students	Percentage	Achievement
1	85-100	Excellent	7	19.4%	(31 people)
2	75-84	Good	24	66.7%	86.1%
3	65-74	Fair	3	8.3%	(5 people)
4	<65	Insufficient	2	5.6%	13.9%
	Total		36	100%	36

Based on the table above, it can be seen that the knowledge aspect learning outcomes in the long jump material in class X 1 students of SMA Negeri 2 Tabanan in the academic year 2023/2024 in cycle II, which the achieved category was 31 students, and the unachieved category was five students. With value details of learning outcomes in accordance with the following categories: seven students with excellent category (19.4%), 24 students with good category (66.7%), three students with fair category (8.3%), and two students with insufficient category (5.6%).

The data analysis results of the knowledge aspect learning outcomes in the long jump material in class X 1 students of SMA Negeri 2 Tabanan in the academic year 2023/2024 can be seen in the following figure

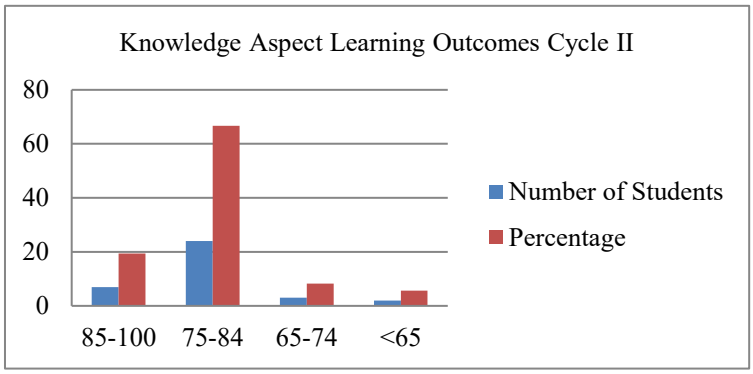


Figure 6. Knowledge Aspect Learning Outcomes Cycle II

Description of Research Analysis Results of Skill Aspect Learning Outcomes

The results of data analysis of the skill aspect learning outcomes through the long jump material in class X 1 students of SMA Negeri 2 Tabanan in the academic year 2023/2024 can be seen in the following table.

Table 6. Data Analysis of Skill Aspect Learning Outcomes Cycle II

No	Learning Achievement Criteria	Category	Number of Students	Percentage	Achievement
1	85-100	Excellent	11	30.6%	(29 people)
2	75-84	Good	18	50%	80.6%
3	65-74	Fair	7	19.4%	(7 people) 19.4%
4	<65	Insufficient	0	0%	
	Total		36	100%	100%

Based on the table above, it can be seen that the skill aspect learning outcomes in the long jump material in class X 1 students of SMA Negeri 2 Tabanan in the academic year 2023/2024 in cycle II, which the achieved category was 29 students, and the unachieved category was seven students. With value details of learning outcomes in accordance with the following categories: 11 students with excellent category (30.6%), 18 students with good category (50%), seven students with fair category (19.4%), and 0 students with insufficient category (0%).

The data analysis results of the skill aspect learning outcomes in the long jump material in class X 1 students of SMA Negeri 2 Tabanan in the academic year 2023/2024 can be seen in the following figure.

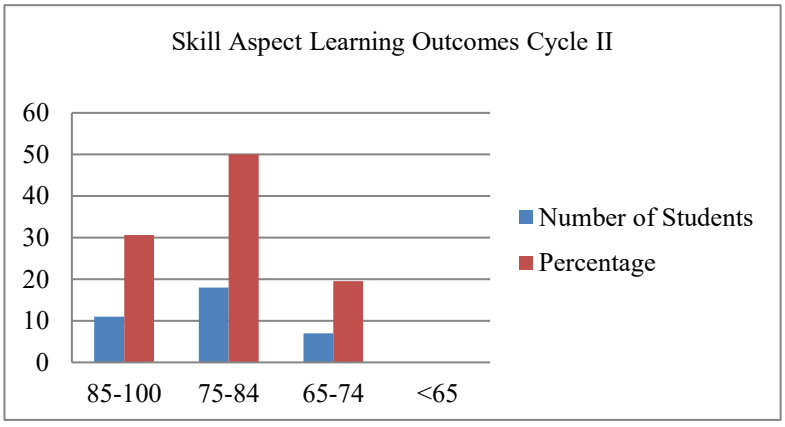


Figure 7. Skill Aspect Learning Outcomes Cycle II

Data Improvement of Cycle I and Cycle II Research Results

The improvement in the attitude aspect of learning outcomes in the long jump material in class X 1 students of SMA Negeri 2 Tabanan in the academic year 2023/2024 from cycle I and cycle II can be seen in the following table.

Table 7. Improvement in Attitude Aspect of Learning Outcomes

No	Stages	Student Learning Objective Achievement	Improved Learning Outcomes from Cycle I to Cycle II
1	Cycle I	6 people (16.7%)	23 people (63.9%)
2	Cycle II	29 people (80.5%)	

Based on Table 7, the results of data analysis of the attitude aspect learning outcomes in the long jump material in class X 1 students of SMA Negeri 2 Tabanan in the academic year 2023/2024 shows that six students get the achieved category in cycle I action (16.7%). Then, 29 students get the achieved category (80.5%) after being given action in cycle II. Thus, there is an increase of 23 students (63.9%) from cycle I.

Improvement in Learning Outcomes of Long Jump in Knowledge Aspect of Cycles I and II

The improvement in the knowledge aspect of learning outcomes in the long jump material in class X 1 students of SMA Negeri 2 Tabanan in the academic year 2023/2024 from cycle I and cycle II can be seen in the following table.

Table 8. Improvement in Knowledge Aspect of Learning Outcomes

No	Stages	Student Learning Objective Achievement	Improved Learning Outcomes from Cycle I to Cycle II
1	Cycle I	16 people (44.4%)	15 people (41.7%)

Based on Table 8, of the results of data analysis of the knowledge aspect learning outcomes in the long jump material in class X 1 students of SMA Negeri 2 Tabanan in the academic year 2023/2024 shows that 16 students get the achieved category in cycle I action (44.4%). Then, 31 students get the achieved category (86.1%) after being given action in cycle II. Thus, there is an increase of 15 students (41.7%) from cycle I.

Improvement in Learning Outcomes of Long Jump in Skill Aspect of Cycles I and II

The improvement in the skill aspect learning outcomes in the long jump material in class X 1 students of SMA Negeri 2 Tabanan in the academic year 2023/2024 from cycle I and cycle II can be seen in the following table.

Table 9. Improvement in Skill Aspect Learning Outcomes

No	Stages	Student Learning Objective Achievement	Improved Learning Outcomes from Cycle I to Cycle II
1	Cycle I	12 people (33.3%)	17 people (47.2%)

Based on Table 9, the results of data analysis of the skill aspect learning outcomes in the long jump material in class X 1 students of SMA Negeri 2 Tabanan in the academic year 2023/2024 shows that 16 students get the achieved category in cycle I action (44.4%). Then, 31 students get the achieved category (86.1%) after being given action in cycle II. Thus, there is an increase of 15 people (41.7%) from cycle I.

DISCUSSION

Long jump is material contained in PE material at school. This discussion was presented according to the research results on the application of the Problem-Based Learning (PBL) learning model to improve long jump learning outcomes in class X 1 students of SMA Negeri 2 Tabanan in the academic year 2023/2024. The changes based on the cycle I learning results applied in cycle II are as follows. In the learning process, the researcher provided movement examples to students by practicing while students conducted discussions about the problems found and finding solutions to the problems obtained. Then, students practiced the prefix technique, pedestal technique, hovering attitude technique, and landing technique in the long jump in the field.

The implementation of improving the learning outcomes of PE long jump material in class X 1 students went quite well. Based on the pre-cycle data, 38% (14 people) of the class X 1 students of SMA Negeri 2 Tabanan obtained the learning outcomes of the long jump with the category of achieving learning objectives. In the analysis of learning outcomes in cycle I, the attitude aspect was 16.7%, the knowledge aspect was 44.4%, and the skill aspect was 33.3%.

Learning in cycle II was very conducive. Students have been able to adapt to the PBL learning model. It can be seen from the student learning activities when the researcher

demonstrated the movements, students no longer watched but actively participated in providing comments on the researcher's explanation at each movement stage demonstrated by the researcher and other students. Based on the percentage of learning outcomes in cycle II, the attitude aspect was 80.5%, the knowledge aspect was 86.1%, and the skill aspect was 80.6%. Considering the data on learning outcomes in cycle II, there was an increase from cycle I to cycle II. This increase was inseparable from the optimal application of the PBL learning model with learning improvements in accordance with the shortcomings that occurred in each previous cycle.

Every teaching process will definitely get learning results. Ulfah & Arifudin (2021) stated that learning outcomes are changes in students' behavior, including cognitive, affective, and psychomotor aspects that occur after participating in teaching. At every teaching stage, the educator must be able to choose the right method according to the material and teaching outcomes. The Problem-Based learning model is one of the innovative learning models that can emphasize the meaningfulness of students in solving a problem.

In addition, the research results were supported and strengthened by previous researchers, including the following: (Tanwisastra et al., 2023) found that the activity and learning outcomes of squatting style long jump increased through the PBL learning model for class VII E students of SMP Negeri 2 Banjarangkan in the academic year 2021/2022, (Subahtiar, 2021) found that the PE activity and learning outcomes on long jump increased through the application of the PBL learning model by playing jumping rope for grade V students of SD 3 Gulang, Mejobo Sub District, Kudus Regency, Semester I in the academic year 2019/2020, (Dhiana Putra et al., 2023) found that the PE learning outcomes of the material on basic techniques of chest pass and bounce pass basketball for class VIII students of SMP Negeri 5 Singaraja in the academic year 2022/2023 increased through the application of the ICT-based PBL learning model.

Based on the research results that the researcher has carried out and the description described above, it can be concluded that the learning outcomes of the long jump have increased through the application of the Problem-Based Learning (PBL) learning model for class X 1 students of SMA Negeri 2 Tabanan in the academic year 2023/2024.

CONCLUSIONS

Based on the results of class action research that has been carried out regarding the learning process by applying the Problem-Based Learning (PBL) learning model to improve

long jump learning outcomes in class X 1 SMA Negeri 2 Tabanan Academic Year 2023/2024, it can be concluded that the application of the Problem-Based Learning model could improve long jump learning outcomes in class X 1 SMA Negeri 2 Tabanan in the Academic Year 2023/2024. This research recommends PE teachers consider using the PBL learning model because it can improve long jump learning outcomes.

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