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## The Implementation of Problem Based Learning Model in Improving Cooperation and Learning Outcomes in Physical Education

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### Article Info

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### Abstrak

Menurunnya budaya kerjasama yang juga berdampak kepada penurunan hasil belajar mahasiswa. Tujuan penelitian ini adalah untuk melihat peningkatan keterampilan berpikir kritis dan Kerjasama mahasiswa Penjaskesrek melalui model Problem Base Learning pada pembelajaran pendidikan jasmani. Metode yang digunakan dalam penelitian ini adalah metode eksperimen dengan Desain dalam penelitian ini adalah Randomize Pretest and Posttest Control Group Design. Teknik pengambilan sampel dalam penelitian ini di ambil secara Cluster Random Sampling, maka sampel pada penelitian ini menjadi dua kelas yaitu kelompok eksperimen kelas 6F dan kelas 6E menjadi kelompok kontrol. Instrumen yang digunakan untuk mengukur kerjasama dengan menggunakan anket dan hasil belajar dengan tes. Analisis penelitian ini menggunakan SPSS 22 dengan uji t. Penelitian ini menyimpulkan bahwa model Problem Base Learning mampu meningkatkan kemampuan kerjasama pada mahasiswa dan juga meningkatkan hasil belajar yang cukup signifikan.

### Abstract

*The decline in the culture of cooperation has an impact on the decrease of the student learning outcomes. The purpose of this study was to see the increase of critical thinking skill and cooperation in Physical Education and Health students through Problem Based Learning Model in Physical Education learning. The method used in this study was experimental method with the Randomize Pre-test and Post-test Control Group Design. The sampling technique in this study was cluster random sampling. The samples of this study were divided into two classes, namely experimental group and control group. The instrument used to measure cooperation was a questionnaire, while learning outcomes were measured by tests. The analysis of this study used SPSS 22 with t-test. This study concludes that the Problem Base Learning model is able to improve the cooperation among the students and also significantly improves learning outcomes.*

## INTRODUCTION

Preparing a competitive human resource with a high characteristic requires a quality education. The skill required in the 21st century, related to education, is Learning and Innovation Skill known as Four Cs including critical thinking, communication, cooperation, and creativity (Robinson & Ken Kay, 2010). There are five highly needed skills in the future, involving the ability to think critically (78%), IT skills (77%), health and fitness (76%), innovation skills (74%), and the responsibility of personal financial skill (72%) (Kay, 2008). Therefore, as educators, we need to prepare a quality human resource who acquires the skill of decision making, problem solving, and facing the challenge of the 4.0 era.

The condition in practice shows that, in Physical Education learning, the students have not been able to do a good cooperation. It is proven by the fact that the group tasks are mostly completed by one or two persons shown by the understanding of the students during presenting the result of the task.

Physical education has a function to develop social skills, including to adapt with the surroundings and to cope with others, to improve decision making skill, interaction skill, and discussion skill, and also to develop the society characteristics (Kristiyandaru, 2010). For that reason, if the culture mentioned earlier continuously happens, the individualism character will develop. Meanwhile, as stated by National Education Association above, the cooperation skill becomes one of the required skills in the 21st century. In addition, facing today's development, the era of industry revolution 4.0, it is the person who could do a good collaboration who are needed instead of those who could work and develop individually. Cooperation is a required aspect in Physical Education learning, so that the students could complete or solve problems in their learning group. The inability of the students to cooperate with their peers in learning process has impacts on their learning outcome due to the absence of the effort to comprehend the task in hand together (Hidayat & Kurniawan, 2015). The better the cooperation, the better the group in completing or solving the problem they experience. To be able to build the cooperation skill and learning outcomes, a teacher should be able to conduct a teaching and learning process that could provide experiences in learning.

The teacher design of teaching and learning process should include the problems to develop the thinking skills of the students that help them to analyze the actual problems (Taufiq & Kurniawan, 2015).

The effective learning process needs the implementation of a right learning model in conducting the teaching and learning process. A learning model that always uses problems to facilitate the students to learn is Problem Based Learning (PBL). Physical Education learning that uses Problem Based Learning will develop the ability to cooperate, solidarity, ideas exchange, and discussion to solve the problems through learning resource they have (Kisworo, Wasitohadi, & Rahayu, 2019).

The Problem Based Learning (PBL) provides learning that offers actual problems that are relevant to critical thinking context to give opportunities in solving problems and gaining knowledge and skills (Saud, 2016). In the implementation of PBL learning model, students will be asked to solve the problem together or in groups, thus the students will start to develop their cooperation ability when they solve the given problems. The implementation of Problem Based Learning, to the Junior High School students, could push the student to comprehend the ability to think critically in various activities such as questioning, discussing problems, and making solutions (Narmaditya, Wulandari, & Sakarji, 2017). The model of Problem Based Learning could improve the learning outcome of the junior high school students. The research cited earlier have not found that the Problem Based Learning model could improve the students' cooperation skill, while solving the problems requires a good cooperation too. Moreover, there has not been the research conducted involving teenagers (Hasmyati, 2012).

According to the problems and previous research cited above, it requires a proof whether Problem Based Learning model could improve cooperation skill and learning outcomes of the students through solving the problems during learning. Therefore, this research is crucial to be conducted as the demand of competitive human resource in education, especially in Physical Education learning.

## METHODS

The method used in this study was quasi experimental method with Randomize Pretest and Posttest Control Group Design. The population of the research were the 6th semester students of Physical Education, Health, and Recreation program of FKIP UIR involving 6a – 6f. To get the samples, the Cluster random sampling technique was used, thus the 6a class, consisting of 35 students, became the experiment class. Meanwhile, the 6c class, consisting of 35 students, became the control class. Therefore, the samples of this study were 70 students in total. The instruments of the research was the likert scale questionnaire ( $R = 0.845$ ) to measure cooperation skill and essay problems to measure learning outcomes. The treatment given was learning sessions with Problem Based Learning model. The Table 2 shows the more specific program. The analysis used in the data analysis process was the t-test by using the SPSS 22 software.

**Table 1.** Problem Based Learning Program

No	Activities
1	Lecturer conveyed the objective of learning and the students would still focus on the given
2	Lecturer tried to give feedback to the students to solve the problems.
3	Lecturer offered a help in solving the problems.
4	Lecturer conducted individual and group consultation.
5	Lecturer guided the students to solve the problem.
6	Conducting the analysis process and evaluating the problem solving.

## RESULT AND DISCUSSION

According to the result of analysis, the following findings are discovered:

**Table 2.** Paired Samples T-Test of Cooperation Skill

	Mean	T	Df	Sig. (2 tailed)
Pretest- Posttest PBL	85	8.654	35	.000
Pretest- Posttest conventional	75	6.234	35	.034

The result of the Paired Samples Test in table 2 shows that the significance value is 0,000, lower than  $\alpha = 0.05$ . It shows that there was cooperation skill improvement of the students after the Problem Based Learning model implemented. Meanwhile, the conventional model implemented in control class could not prove the improvement of the cooperation skill of the students in Physical Education learning.

**Table 3.** Paired Samples T-Test of Learning Outcomes

	Mean	T	Df	Sig. (2 tailed)
Pretest- Posttest PBL	80	8.654	35	.000
Pretest- Posttest conventional	75	6.234	35	.054

The result of Paired Samples Test presented in table 3 shows that the significance value is 0,000, lower than  $\alpha = 0.05$ . This research shows that there was an improvement of the student learning outcomes after the Problem Based Learning model given. Meanwhile, in the control class, the use of conventional method was not proven to be able to improve the student learning outcomes in Physical Education learning.

**Table 4.** Independent Samples T-Test

F	Sig	T	Df	Sig. (2-tailed)
8.636	.000	3.242	68	.000

The result of the Independent Sample Test in the table 4 presents that the Problem Based Learning model and conventional learning model gained the value of significance 0,000, lower than  $\alpha = 0.05$ . It concluded that there was a significant difference of the cooperation skill of the students as the result of the treatment using Problem Based Learning model compared to the use of the conventional learning model. The development of a good cooperation in learning atmosphere enables students to comprehend the understanding faster. As the understanding of the students improved, the learning outcomes of the students receiving the Problem Based Learning model

also significantly improved.

The similar result is also presented in table 2. The mean value of the Problem Based Learning model was 85; while the conventional learning model mean value was 75. It indicates that the cooperation skill of the students in the Problem Based Learning model class is better than in the conventional learning model class. Table 3 also presents a similar finding. The mean value of the Problem Based Learning model class is higher, 80, than the conventional learning method class, 75. It concludes that the learning outcome of the students in Physical Education learning through Problem Based Learning model is better than through conventional learning model.

The Problem Based Learning model provides opportunities to the students to solve problems in learning together that eventually improves the learning quality of the students. The core of the Problem Based Learning model occurs during the interaction among students and the interaction between students and the teacher during solving the problem they face in the provided game. The interaction and motivation interactively conducted by the lecturer is aimed at initiating students to be more active in solving the problem and to stimulate them to do a well cooperation with their team mate which gives impacts on their understanding, knowledge improvement, and learning outcomes.

Teacher, during conducting learning process through Problem Based Learning model, urges students to interact, be active, and do a good cooperation to solve the problem, thus the learning outcome improves (Saud, 2016). Doing a good cooperation in Problem Based Learning is a characteristic of this model, thus it motivates other team mates to involve directly in solving the problem, give opportunities to discuss, and find the solution. This process is the factor that improves the cooperation skill of the students in learning. Problem Based Learning model is a learning process that pushes students to propose a problem, do an authentic investigation, create a product, and cooperate with others (Rahayu, 2019). Problem Based Learning concerns on students taking active planning, organizing, and conducting their own learning in a group framework (Bethell & Morgan, 2011). Therefore, by solving the problem in group, it is expected that the

cooperation skill will improve well.

The Problem Based Learning builds the students' motivation and inquiry, thus it will give impacts on their learning outcomes. The implementation of the Problem Based Learning could improve learning outcomes started by solving the problem together. During solving the problem activity, the teacher still has to deliver a solution, but the teacher may not deliver all the solution of the problem given (Paloloang, 2014). Offering a help to the students when they learn is a duty of the teacher, but the help may not exceed the portion, so that the students will have an ability in finding the solution by themselves or known as scaffolding (Safi'i, 2012).

## CONCLUSION

The result of this research found that implementing the Problem Based Learning model gave an impact on the improvement of the students' cooperation skill and understanding. The further research is expected to deeper discuss the skills required in the future such as critical thinking, creativity, cooperation, and communication, especially for the students of Physical Education and Recreation Program.

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