

**EFFECT OF PROJECT BASED LEARNING (PJBL) LEARNING  
MODEL ON LEARNING OUTCOMES  
SHOOTING BASKETBALL**

**Exkwantri<sup>1</sup>, Fitriana Puspa Hidasari<sup>2</sup>, Novi Yanti<sup>3</sup>**  
Universitas Tanjungpura<sup>1,2,3</sup>  
[exkwantri813@student.untan.ic.id](mailto:exkwantri813@student.untan.ic.id)

**Abstract**

*Lack of students' ability to master the shooting basketball, making shooting inaccurate towards the hoop. It is necessary to apply the right learning model to improve students' abilities in shooting. The purpose of this study was to see the impact of project basic learning on shooting skills in basketball games. The research method used is an experiment with quantitative data types. The population in this study were class XI students at SMKN 3 Pontianak. Sampling used a purposive sampling technique and obtained a sample of 35 students. Based on the research conducted, the results obtained were an average pretest score of 10.5 while a posttest average score of 14.0 with an average increase difference of 3.5 or 33.33%. For data analysis in research used t-test. The results of the t-test calculations show that there is a significant effect between the pre-test and the post-test. The significance value obtained is 0.000, less than 0.05. As for the test that was carried out, the result was that  $t_{count} (16.557) > t_{table} (2.035)$ . From these results it can be seen that  $H_a$  is accepted and  $H_0$  is rejected, which means that the project based learning model influences the ability to shoot basketball in class XI students at SMKN 3 Pontianak.*

**Keywords:** *learning model, project based learning; basketball shooting*

Submitted : 02<sup>th</sup> of June 2023

Accepted : 28<sup>th</sup> of July 2023

Published : 31<sup>th</sup> of July 2023

Ccorrespondence author: Exkwantri, Universitas Tanjungpura, Indonesia

E-mail: [exkwantri813@student.untan.ic.id](mailto:exkwantri813@student.untan.ic.id)

DOI  <http://dx.doi.org/10.31851/hon.v6i2.12779>



Jurnal Laman Olahraga Nusantara licensed under a [Creative Commons Attribution-ShareAlike 4.0 International License](https://creativecommons.org/licenses/by-sa/4.0/)

**INTRODUCTION**

The world of sports education requires an update with a learning model that can provide students with understanding, sports and health physical education (PJOK) is an education where fitness is used as a reference point in educating, so that it has the aim of providing physical fitness and being able to improve exercise skills for students. PJOK is an educational process that involves physical activity in order to harmonize humans and shape humans into strong, noble-hearted personalities (Ismail, Raoda 2018. p.182). According to government regulation

number 81A of 2013, that the learning process is required to be student-centered, able to develop children's creativity, load ethical, aesthetic, logical, and kinesthetic values, create fun and challenging conditions, and provide diverse learning experiences (Kemendikbud, 2013).

Regarding the notion of learning, the Law on the National Education System No. 20 of 2003 states learning is "the process of interaction of students with educators and learning resources in a learning environment". Learning as a learning process built by the teacher to develop creative thinking that can improve students' thinking skills, and can improve the ability to construct new knowledge as an effort to improve good mastery of subject matter. According to Panuntun, (2020) learning is the process of interaction of students with educators and learning resources in a learning environment. Learning is assistance provided by educators so that the process of acquiring knowledge and knowledge can occur, mastering skills and character, as well as forming attitudes and beliefs in students. In other words, learning is a process to help students learn well (p.20).

At this time Indonesia is experiencing a Corona virus infection or COVID-19 caused by a coronavirus, which is a group of viruses that infect the severe respiratory system, which can cause death. The government is trying various things to reduce the number of infected cases of Covid-19. "At the beginning of the pandemic, the president of the republic Indonesia stipulated regulations regarding large-scale social restrictions (PSBB) through Government Regulation (PP) Number 21 of 2020, so that the president stipulated learning policies online" (Nurillatiffah, Salsabila, & Pontoh, 2021, p.2).

Almost all sectors have experienced changes, including the world of education, which has been affected. Learning that is usually carried out in the school environment, suddenly with the outbreak of this virus in March 2020, must be diverted to distance learning (PJJ), either online or network, namely using information technology which is a means of the learning process (Nurfatimah et al., 2020) or offline (offline), namely through the use of learning programs such as learning through television, radio, modules and so on (Kemendikbud, 2020).

Initially, limited face-to-face learning (PTM) was carried out. PTM Limited is considered effective as a form of learning to change behavior, because it involves direct interaction between educators and students. By applying the PTM method, learning can be done more effectively than the distance learning method. The use of the PTM method makes it easier for teachers to control students in participating in learning. As well as giving parents the opportunity to have more free time for other productive activities compared to supervising children in distance learning (PJJ). Therefore the application of the PTM method is very important to deal with urgent conditions (Wijayanto, 2022, p.5).

The urgency of implementing PTM in schools is needed for several subjects such as physical education. This is because students' physical education subjects are required to carry out sports movement activities, so that the teacher can directly supervise the student's activities, as well as correct student movement errors. In addition, by implementing face-to-face meetings, it can increase students' fitness compared to learning carried out at home (Wijayanto, 2022, p.5).

Based on the latest rules for imposing restrictions on community activities (PPKM), limited PTM is implemented by educational units in PPKM areas level 1-3. Meanwhile, education in the PPKM level 4 area continues to carry out distance learning (PJJ). Implementation of PTM in regional education units PPKM level 1-3 in accordance with regulations in the joint decision of the Minister of Education and Culture, Minister of Religion, Minister of Health, and Minister of Home Affairs Number 03/KB/2021, Number 384 of 2021, Number HK.01.08/MENKES /4242/2021, Number 440-717 of 2021 concerning Guidelines for Organizing Learning During the 2019 Coronavirus Disease (Covid-19) Pandemic, or what is known as the Joint Decree (SKB) of four ministers (Wijayanto, 2022, p.33). "Regarding limited PTM, the method of implementing learning in each province and district certainly has different methods and policies in responding to it" (Pattanang, Limbong, & Tambunan, 2021, p.114).

At present there are many variations of learning models that can be used by teachers so that the learning process can be carried out effectively so that the source of information is not only centered on the teacher. Based on the results of observations made at SMKN 3 Pontianak, it is known that students' motor skills for basketball material are still relatively low. This can be seen from the students' ability to maximize practical movements in basketball shooting material which is still not good. To overcome this problem, the right solution is needed so that it can improve students' ability to maximize movements when practicing physical education subjects. Based on these problems it is necessary to apply an effective learning model, one of which can be through project based learning.

According to Saerozi, Hadromi, & Khumaedi (2017) Project Based Learning (PjBL) is "a learning model that provides opportunities for teachers to manage learning in the classroom by involving project work" (p.58). Meanwhile, according to Murniarti (2017) project based learning is: "a learning model that can be applied to all levels education. In this learning method the educator acts as a facilitator. Project Based Learning aims to find solutions to problems, besides that students also learn the concept of how to solve problems and develop abilities. In studying the concepts and critical thinking skills, students work together in groups to study real problems. By applying this learning model it is hoped that it can make students more active and creative, by learning from what they see from their environment (p.2). Meanwhile, "Project-based learning is a comprehensive teaching approach in which students are involved in ongoing investigative activities" (Saerozi et al., 2017, p.59).

In PJOK learning there are various kinds of games and sports, one of which is basketball. This sport is one of the most popular sports among students today, including SMKN 3 Pontianak. The PjBL learning model is classified as suitable for some or even all subjects, including physical education subjects. But unfortunately, the implementation of PjBL in physical education learning is still rarely done by teachers. Judging from the observations made at SMKN 3 Pontianak, in general, the process of learning physical education in the classroom

is still teacher-centered. Then the researcher will formulate the problem and determine the purpose of this study, namely to improve the ability of shooting techniques for basketball games by applying the project based learning learning model.

## METHOD

This study used a quantitative approach with a pre-experimental design with a one group pre-test post-test design without control. This study did not use a control group, but the first observation (pre-test) was carried out which made it possible to test the changes that occurred after the experiment. According to Fajri, Yoesoef, & Nur (2016) the quantitative method relies very strongly on data collection in the form of measurement results, therefore the data collected must be processed statistically so that it can be interpreted correctly. good. Apart from that, other uses are field research (Field Research), namely conducting direct observations to obtain the necessary information and library research (Library Research), carried out using literature (library) from previous research (p.104). While the experimental research method according to Sugiyono (2013), namely, "A method that can be interpreted as a research method to look for the effect of certain treatments on others in controlled and controlled conditions" (p.107).

The data collection techniques used in this study included tests and measurements of basketball shooting techniques. According to Ardiansyah, Triansyah, & Hidasari (2019) a test is a tool used to collect information or data about a person or a particular object, related to this understanding, then any tool used can also be called an instrument (p.4). whereas "measurement is the process of gathering information, usually this activity is carried out by comparing something with a certain size and is quantitative in nature" (Susilawati, 2018, p.2).

The research instrument used to collect data in this study was a basketball shooting technique test sheet. While the goal to be achieved in this research instrument is to measure students' ability to perform shooting skills in basketball games (Andresta, 2019p.36-37). According to Lestari & Resyana (2019) "research instruments are the tools used for data collection" (p.141).

In accordance with the type of research and the type of data, the analysis used in this experimental research is quantitative analysis using statistical formulas, which include testing the effect of variables X and variables Y. The purpose of using this analytical method is to simplify data into in research purposes. In this quantitative analysis the researcher will then analyze the data that has been collected using a mathematical process called statistical procedures.

## RESULT AND DISCUSSION

### Result

This research was conducted for one month starting from 29 August 2022 to 27 September 2022. The research location was at SMKN 3 Pontianak school. The data processing of the results of this research is based on the results of the tests that have been carried out, in the form of a test of the influence of the project-based learning model on students' basketball shooting abilities with an analysis of the influence test. The results of data analysis were compared and then conclusions were drawn to find out the results of the research as an answer to the research problem. Based on the research results, the research data obtained are as follows:

### Calculation Pretest and Posttest

As for the data analysis of pretest results from the student basketball shooting test at SMKN 3 Pontianak, the statistical results are obtained in the following table 1:

**Table 1.** Description Of Pretest

Number of Participants	Highest	Lowest	Number of values	Average	Std. Dev
35	18	6	369	10,5	2,83

After the descriptive statistics of pretest, then the next step is to group students based on value categories. The formula used for the category of scoring scores for basketball shooting is as follows:

Length of Interval =  $(H - L) / n\text{Category}$ , (Amiruddin, 2010)

Length of Interval =  $(H - L) / n\text{Category}$

=  $(24 - 6) / 3$

=  $18 / 3$

= 6

The following is a frequency distribution table based on the score categories obtained between low, medium, or high:

**Table 2.** Pretest Data Frequensi Distribution

Value Interval	Category	Frequency	Percentage
6 - 12	low	26	74%
13 - 19	moderate	9	26%
20 - 26	high	0	0%
TOTAL		35	100%

From the table it can be seen that the pre-test scores of students with intervals of 6 - 12 with low categories are 26 participants and percentage of 74%. then there were 9 participants who had medium category scores with intervals of 13-19 and a percentage of 26%, while for the high category with score intervals of 20-26 there were no participants who obtained these values with a percentage of 0%.

Results data Posttest from the student basketball shooting test at SMKN 3 Pontianak school, the statistical results are obtained in the following table:

**Table 3.** Description Of The Posttest

Number of Participants	Highest	Lowest	Number of values	Average	Std. Dev
35	23	8	491	14,0	3,32

After knowing the descriptive statistics of posttest, then the next step is to group students based on value categories. The formula used for the category of scoring scores for basketball shooting is as follows:

Length of Interval =  $(H - L) / n\text{Category}$ , (Amiruddin, 2010)

Length of Interval =  $(H - L) / n\text{Category}$

=  $(24 - 6) / 3$

=  $18 / 3$

= 6

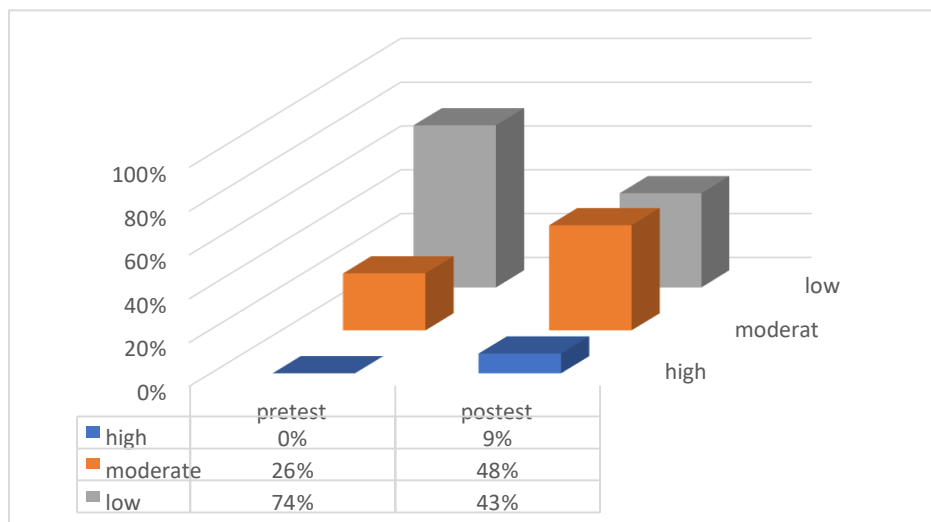
The following is a frequency distribution table based on the category of scores obtained between low, medium, or high:

**Table 4.** Data Frequency Distribution Posttest

Value Interval	Category	Frequency	Percentage
6 - 12	Low	15	43%
13 - 19	Moderate	7	48%
20 - 26	High	3	9%
Total		35	100%

From the table above it can be seen that the post-test scores of students with intervals of 6 - 12 scores with a low category of 15 participants and a percentage of 43%. then there were 17 participants who had moderate category

scores with value intervals of 13-19 and a percentage of 48%, while for the high category with score intervals of 20-26 there were only 3 participants who obtained these scores with a percentage of 9%. The histogram image of the pretest and posttest score category comparisons is as follows:



**Figure 1.** Histogram Comparison Of Pretest And Posttest Score Categories

### Prerequisite test and research data analysis

#### Normality Test

Data normality test in this study used the Kolmogorovsmirnov test. With the provisions:

1. If the probability value (Kolmogrov-Smirnov) < significant level 0.050, then the data distribution can be said to be abnormal.
2. If the probability value (Kolmogrov-Smirnov) > significant level is 0.050, then the distribution of the data can be said to be normal.

The data normality test performed can be seen in table 5 below:

**Table 5.** Normality Test

Test	Average	N	Sig (2-tailed)	Description
Pretest	10,5	35	0,061	Normal
Posttest	14,0			

In the calculation using the Kolmogrov-Smirnov test found a significance value (2-tailed) of 0.061, so when compared with 0.050, the distribution of



statistical data for 35 samples is greater than 0.050 ( $p > 0.050$ ). Therefore it can be concluded that the data in the study were normally distributed.

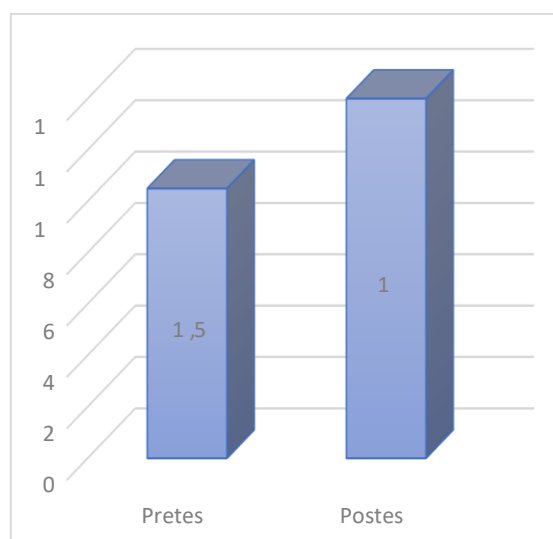
### Influence Test

To find out whether there is a significant effect of the project based learning learning model on the learning outcomes of shooting basketball in class XI students at SMKN 3 Pontianak. The test can be seen in the table 6 below:

**Table 6.** Influence Test

Test	Average	Significance	T Count	T Table
pre-test	10,5	0,000	16,557	2,035
post-test	14.0			

Based on the statistical output of the table above it can be seen that the significance value (2- tailed) of 0.000 where the significance value is less than 0.05 ( $p < 0.05$ ). As for the tests carried out, the result was that tcount (16.557) > ttable (2.035). So it can be concluded that there is a significant difference in the effect of the project-based learning model on the learning outcomes of shooting basketball in students after being given treatment. Because there is a significant difference, it can be said that there is an influence of the project based learning learning model on the learning outcomes of shooting basketball in class XI students at SMKN 3 Pontianak. The histogram graph for comparison of the average pretest and posttest can be described below:



**Figure 2.** Comparison of pretest and posttest averages

### Percentage of Influence

To find out the results of the research treatment used to calculate the percentage increase with the following formula: mean different = mean posttest-mean pretest.

$$\text{The percentage increase in} = \frac{\text{mean different}}{\text{mean pretest}} = \frac{3,5}{10,5} \times 100\% = 33,33\%.$$

Source: (Damar Budi M, 2016. P.49)

The following table shows the percentage of influence between the average pretest:

**Table 7.** Percentage Of Influence

Test	Average	Difference In Average Increase	Percentage Of Influence
Pre-Test	10.5	35	33.33%
Post-Test	14.0		

From the table it can be seen that there is an increase obtained from the value at the pre-test with an average of 10.5 and the value obtained at the post-test is 14.0. From these results, the difference in the average increase is 3.5 which is then divided by the average pre-test value ( $3.5 / 10.5 \times 100\%$ ) so that the percentage effect value is 33.33%.

### Discussion

In this study, the initial process of research was carried out by looking at the basic abilities of students through an initial test (pretest). In the initial test the students still lacked the ability to shoot a basketball. This situation makes the shooting carried out by students less accurate towards the ring. From what was observed by the researcher when carrying out the initial test, students only focused on the power of throwing the ball towards the ring without paying attention to the proper procedures and accuracy in shooting. Therefore, the scores obtained by students during the initial test (pretest) were still low because most of the shooting was not accurate and the movements were not precise from the start of shooting to the end.

From the implementation of the learning program that has been carried out, the researcher observed that there was a significant development of the

students in carrying out the shooting technique towards the ring, to then carry out the final test (post-test). The final test was carried out aiming to compare initial abilities and final abilities after implementing a project-based shooting learning program (PjBL).

After the research process is carried out, the next step is to analyze the influence test between the initial test and the final test, where based on the results of the research data analysis, it can be stated that the initial test obtained a lower ability score than the final test, based on these results that there is an increase between the initial test with final test. Based on the results of the research and analysis of the influence test that has been carried out, it can be concluded that there is a significant influence of the project based learning model on the ability to shoot basketball in class XI students at SMKN 3 Pontianak. The average participant's basketball shooting skills in the pretest was 10.5 while in the posttest it was 14.0. The results of this study are in line with research conducted by Arafah, (2015) which stated that there was a significant effect of the project based learning teaching method on the ability to chest pass basketball. Based on Arafah's research, it was found that the pretest and posttest scores in the PjBL group ( $\bar{x}=23.35$ ) were higher than the pretest and posttest comparisons in the control group ( $\bar{x}=19.25$ ) with a level of  $\alpha=0.05$ .

Based on the results of data processing through statistical analysis, it can be seen that after comparing the pre-test and post-test, most of the results obtained by students have increased. This of course cannot be separated from the influence of more competent learning programs according to needs. It can be stated that project-based learning has a positive influence in improving basketball shooting, this is related to the opinion of H Arafah (2015) in his research, namely PjBL supports physical education learning in chest pass skill material, considering that PjBL is a comprehensive learning that involves students conducting investigations collaboratively. PjBL assists students in learning solid knowledge and skills that are built through authentic assignments and work. Learning situations, environments, content, and tasks that are relevant, realistic, authentic, and present

the natural complexities of the real world are able to provide students' personal experiences with chest pass skills so that the information obtained by students when doing this learning will carry a fairly strong suggestive message (h. 71).

## CONCLUSION

Based on the results of data collection, both the initial test and the final test of the study, it was analyzed through an influence test where the average score of students' basketball shooting skills during the pre-test was 10.5 while during the post-test it was 14.0. From the results of the influence test, a significance level value of 0.00 was obtained, which was less than 0.05 ( $p < 0.05$ ). As for the tests carried out, the result was that  $t_{count} (16.557) > t_{table} (2.035)$ . Based on the results of this analysis, a conclusion can be drawn that answers the research hypothesis, namely the hypothesis is accepted, meaning that there is a significant effect of the project based learning learning model on the learning outcomes of shooting basketball in class XI students at SMKN 3 Pontianak.

## REFERENCES

- Amiruddin, Z. (2010). Statistik Pendidikan. *Yogyakarta: Teras*.
- Andresta, R. A. (2019). Upaya Peningkatan Kemampuan Shooting Free Throw Bola Basket Melalui Media Audio Visual Pada Siswa Kelas X MIPA1 SMA Negeri 1 Rengat Barat. Universitas Islam Riau.
- Ardiansyah, R., Triansyah, A., & Hidasari, F. P. (2019). Survey tingkat keterampilan dasar futsal dan vo2max siswa ekstarturikuler futsal sma negeri 5 pontianak. *Jurnal Pendidikan Dan Pembelajaran Khatulistiwa (JPPK)*, 8(10).
- Damar Budi M, (2016). Pengaruh Permainan Target Terhadap kemampuan Shooting Under Ring Bola Basket pada Siswa kelas VIII di SMPN 1 Sedayu Kab, Bantul. Skripsi. Yogyakarta. Universitas Negeri Yogyakarta.
- Fajri, N., Yoesoef, A., & Nur, M. (2016). Pengaruh model pembelajaran kooperatif tipe talking stick dengan strategi joyful learning terhadap prestasi belajar siswa pada mata pelajaran IPS kelas VII MTsN Meuraxa Banda Aceh. *JIM: Jurnal Ilmiah Mahasiswa Pendidikan Sejarah*, 1(1).
- H Arafah, H. A. (2015). Pengaruh Metode Pembelajaran Project Based Learning dan Metode Pembelajaran Discovery Learning Terhadap Hasil Belajar Keterampilan Chest Pass dalam Permainan Bolabasket pada Siswa SMP Negeri 2 Watansoppeng. Pascasarjana.
- Kemdikbud, P. W. (2020). Kemendikbud Terbitkan Pedoman Penyelenggaraan

- Belajar Dari Rumah. Kementerian Pendidikan dan Kebudayaan. diambil dari <https://www.kemdikbud.go.id/main/blog/2020/05/kemendikbud-terbitkanpedoman-penyelenggaraan-belajar-dari-rumah>
- Lestari, P., & Resyana, H. (2019). Asuhan Kebidanan Komprehensif Pada Ny. R Di Wilayah Kerja Klinik Dharma Bakti Ranomeeto. Skripsi. Kendari. Poltekkes Kemenkes Kendari.
- Murniarti, E. (2017). Penerapan Metode Project Based Learning. *Journal of Education*, 3(2), 369–380.
- Nurillatiffah, T., Salsabila, N. A., & Pontoh, R. S. (2021). Pengaruh PTM Terbatas Terhadap Efektivitas Belajar pada Tingkat Menengah Atas Negeri di Kota Bandung. *E-Prosiding Seminar Nasional Statistika/ Departemen Statistika FMIPA Universitas Padjadjaran*, 10, 39.
- Panuntun, F. (2020). Pengaruh Model Pembelajaran Kooperatif Teams Games Tournament (Tgt) Dan Problem Based Learning (Pbl) Terhadap Hasil Belajar Sepak Bola (Dribbling) Pada SiswaKelas Xi Smk Hkti 2 Banjarnegara. *Journal of Sport Coaching and Physical Education*, 5(1), 19–23.
- Pattanang, E., Limbong, M., & Tambunan, W. (2021). Perencanaan Pelaksanaan Pembelajaran Tatap Muka Di Masa Pandemi Pada Smk Kristen Tagari. *Jurnal Manajemen Pendidikan*, 10(2), 113–120.
- Saerozi, S., Hadromi, H., & Khumaedi, K. (2017). Pengaruh Model Pembelajaran Proyek dan Motivasi terhadap Kompetensi Praktik Pengelasan. *Journal of Vocational and Career Education*, 2(1).
- Sugiyono, D. (2013). Metode penelitian pendidikan pendekatan kuantitatif, kualitatif dan R&D.
- Susilawati, D. (2018). Tes dan pengukuran. UPI Sumedang Press.
- Wijayanto, A. (2022). Urgensi, Implementasi, Problematika, Dan Evaluasi Pembelajaran Tatap Muka Terbatas Pada Pendidikan Jasmani Dan Olahraga.