

The Influence of the Project Based Learning (PJBL) Model in Improving Students' Critical Thinking Skills in PKN Fourth Grade Subjects of SDN 15 Palu



Marsela¹, Arif Firmansyah², Sisriawan Lapasere³, Pahriadi⁴, Muslim A.R.⁵

^{1,2,3,4,5} Elementary School Teacher Education Study Program, Tadulako University

ABSTRACT: This study aims to determine the Influence of the Project Based Learning (PJBL) Model in Improving Students' Critical Thinking Skills in the Fourth Grade PPKN Subject of SDN 15 Palu. The population in this study is 25 students in grade Four A for the 2024/2025 school year. Sampling uses saturated sampling techniques. The data collection technique uses Pretest and Posttest tests. Based on the results of the study on the Influence of the Project Based Learning (PJBL) Model in Improving Students' Critical Thinking Skills in the Fourth Grade PPKN Subject of SDN 15 Palu, the value of the hypothesis test paired sample T-Test Sig. (2 Tailed) $0.000 < 0.05$, then H_0 was rejected and H_a was accepted, meaning that the alternative hypothesis (H_a), namely the project-based learning (PJBL) model was effective in improving the critical thinking skills of fourth grade students of SDN 15 Palu was accepted. Meanwhile, the zero hypothesis (H_0), namely the project-based learning (PJBL) model, is not effective in improving the critical thinking skills of fourth grade students of SDN 15 Palu was rejected. The researcher can draw the conclusion that the project-based learning model is effective in improving the critical thinking skills of grade IV students of SDN 15 Palu.

KEYWORDS: Project Based Learning (PJBL) Model, Critical Thinking, PPKN Subjects

INTRODUCTION

Civic Education is a core program to develop the quality, interest, and dignity of the Indonesian nation towards the realization of national ideals. Through this subject, students are formed to have awareness and behavior in accordance with the values of Pancasila in daily life. PKN also plays an important role in influencing other subjects and has a close relationship with fostering harmony (Abdulatif & Dewi, 2021). Civic Education (PKN) is a core program to develop the quality and dignity of the Indonesian nation, which aims to form citizens with Pancasila character. In Law Number 20 of 2003, PKN is stipulated as a compulsory subject in elementary schools (SD) which equips students with citizenship knowledge. Through an approach that requires critical thinking, PKN seeks to develop students' ability to solve problems rationally, actively, and logically in the context of national life.

Based on this strategic role, PKN in Law Number 20 of 2003 is defined as an effort to equip students with basic knowledge and skills about the relationship between citizens and defending the country. PKN is a compulsory subject in elementary school that combines aspects of reasoning, values, and morals, with the core material of Pancasila as the basis of the state and the concept of citizenship, although in practice learning is still dominated by expository and memorization approaches (Wati et al., 2023). As one of the innovative pedagogical methods, the application of the project-based learning model (PJBL) aims to improve students' critical thinking skills in Civic Education subjects. (Andirasdini & Fuadiyah (2024) stated that the Project-Based Learning (PJBL) model is a model that exposes students to relevant learning, which positively influences the development of students' creative thinking, allowing students to actively explore knowledge, ask questions, find problems, design, and implement projects. Project-Based Learning (PJBL) is a strategy that can improve various competencies such as academics, achievements, levels of thinking, critical thinking, problem-solving skills, creativity, independence, and the presentation of the ability to see situations from a better perspective.

Critical thinking is the ability to solve life's problems by thinking seriously, actively, meticulously in analyzing all the information received by including rational reasons (Prasasti et al., 2019). According to (Cahyani et al. (2021), critical thinking skills are a skill that a person can use in understanding certain opinions which are then used for decision-making considerations, and even have the potential to evaluate a certain thought and related values. Sumaryanto et al. (2024), critical thinking is a way to

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draw conclusions about a belief. The ability to think critically is not only oriented to results or values, but further this ability focuses on asking questions that have to do with the facts and answers that exist. Some experts define critical thinking as a form of higher order thinking (Higher Order Thinking Skill). High-level thinking occurs when a person takes information stored in memory and interconnects or rearranges it to expand this information to achieve a goal or find a possible answer in a confusing situation.

The purpose of this study is to improve students' critical thinking skills in the fourth grade Civic Education (PKn) subject through the application of the project-based learning model (PJBL). The importance of this research lies in the effort to apply learning methods that are able to motivate students in developing critical thinking skills that are not only oriented to the final result but also to the process of asking questions related to existing facts and answers. With honed critical thinking skills, students can solve problems more rationally and logically, a competency that is considered crucial in the context of modern education and today's global challenges. The urgency of this research arises from the lack of traditional methods that tend to be expository and memorize-based, which are often inadequate to equip students with the high-level thinking skills needed to face the dynamics of national and state life. Given the importance of PKn as a core program that forms citizens with Pancasila characteristics, the implementation of PJBL is expected to support the educational mission in forming active, creative, and independent students. Furthermore, this research also serves as a contribution to the development of new pedagogical strategies that are in line with the needs of a competency-based curriculum, where the critical thinking element is essential. Thus, the application of the PJBL model in PKn learning is not only academically relevant but also practically in equipping students with the ability to adapt and contribute positively in their social lives.

From the results of initial observations in the field that were carried out, it showed that the fourth grade students of SDN 15 Palu, in the PKn learning process, still many students were immersed in their own world, and the learning process was still not fun. When teachers give students the opportunity to ask questions about material that they do not understand, students tend to be silent and passive, so that learning becomes monotonous and does not develop students' critical thinking skills. At the time of explanation and at the end of the lesson, the student has not been able to draw conclusions from what he has learned. When the teacher asks for the students' opinions, the students are unable to express their opinions. Based on the description above, the researcher wants to apply the Project-Based Learning Model (PJBL) in PKn subjects with the aim of helping students in the critical thinking process. Project-Based Learning (PJBL) is a learning model that allows teachers to manage classroom teaching by integrating project assignments. By implementing project-based learning, learners can develop their understanding of how to solve problems and create products as evidence of their ability to solve these problems.

LITERATURE REVIEW

The Project Based Learning (PjBL) learning model is an innovative approach in the world of education that provides a meaningful learning experience through project completion. According to Umi Faizah in Natty et al. (2019), PjBL is a learning strategy that allows students to gain new knowledge and understanding based on their experiences through various presentations. This model gives students the freedom to explore learning activities, plan and execute projects collaboratively to produce products that help them develop intellectual, social, economic, and moral skills. The same thing was expressed by Isriani Hardini and Dewi Puspitasari in Yuliana et al. (2022) that PjBL provides opportunities for teachers to direct learning through project work that is able to increase students' creativity and motivation. In addition, Warsono and Hariyanto in Sakaria et al. (2019) mentioned that PjBL seeks to connect technology with daily problems and school projects that are familiar to students. From these various opinions, it can be concluded that PjBL is a learning model that unites technology and contextual problems in complex project activities to encourage creativity and student enthusiasm for learning.

The learning characteristics of PjBL, according to Abdul Majid and Chaerul Rochman in Anwar et al. (2020), include several important aspects, including: students make decisions about the framework, face the problems or challenges posed, design processes to find solutions, manage information collaboratively, evaluate continuously, conduct periodic reflections, and produce final products that are evaluated qualitatively in An atmosphere tolerant of mistakes and changes. The advantages of this model as explained by Karim (2017) include increased motivation, problem-solving skills, cooperation, resource management skills, and better resource management. However, they also noted that PjBL has several weaknesses, including the association of real-world problems with discipline problems, long time requirements, high costs, and quite a lot of equipment (Manik et al., 2024). In its implementation, Mulyasa in Aziz & Nurachadijat (2023) states four main steps in PjBL, namely: preparing project questions or assignments, designing project planning, compiling schedules, and monitoring project activities and developments. Meanwhile, Aria Yulianto in Pasaribu (2022) compiles six steps of PjBL syntax: determining basic questions, creating a project design, arranging scheduling, monitoring progress, assessing results, and evaluating experience. Supardan in Yuni Pantiwati et al. (2024) developed an additional syntax in the form of three main stages: planning (systematic planning and solution discovery), creating (project

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implementation and product presentation), and processing (comprehensive project evaluation including peer evaluation, self, and portfolio). In general, the steps of PjBL can be summarized as: the provision of complex problems, project planning, scheduling, project investigation, monitoring, presentation of results, project assessment, and final evaluation.

In line with that, Bruce Joyce developed a theory of learning model components, including PjBL, which includes: syntax or learning stages, social systems that describe the interaction between teachers and students, support systems in the form of teaching facilities and materials such as RPP, LKPD, LCD, and teaching aids, as well as instructional and accompanying impacts. The instructional impact of PjBL is in the form of increasing creativity and motivation to learn, while the accompanying impact is the growth of confidence, the ability to work together, innovative attitudes, and students' curiosity. In the context of critical thinking, Agus & Purnama (2022) explain that critical thinking is the ability to analyze carefully to avoid biased and inaccurate decisions. This ability is essential in evaluating statements through logical reasoning. Langango (2022) added that critical thinking is an organized mental process that plays a role in decision-making by interpreting data scientifically. A similar opinion was conveyed by Robert H. Ennis, Zakiah & Lestari in Siti et al. (2023) who emphasized that critical thinking is reflective, focusing on decision-making on what to believe and do. Bayer in Siti et al. (2023) states that critical thinking is a structured way of thinking that includes assessing the effectiveness of ideas or arguments. Furthermore, the characteristics of critical thinking according to Seifert and Hoffnung in Desmita & Didik (2009), include the ability to conceptualize, collect and analyze information, identify important materials, think rationally and reflectively, and the ability to draw valid conclusions. Indicators of critical thinking according to Rosmalinda et al. (2021) include interpretation, analysis, evaluation, and inference. Interpretation is concerned with understanding problems, analysis with relationships between concepts, evaluation with the application of problem-solving strategies, and inference with the drawing of logical conclusions. Ennis in Hidayat & Hidayati (2022) compiled the FRISCO (Focus, Reason, Inference, Situation, Clarity, Overview) indicator to assess critical thinking. The indicator assesses the focus of attention, reason, quality of conclusion, suitability to the situation, clarity of explanation, and review of the entire thought process.

The application of the PjBL model is very relevant in the learning of Civic Education (PKn). Citizenship Education aims to form citizens who understand and are able to carry out their rights and obligations in the life of the nation and state. From an early age, this education is instilled to produce a generation that is intelligent, skilled, and has character based on the values of Pancasila and the 1945 Constitution. The application of effective learning methods such as PjBL is important in achieving these goals because it not only delivers material, but also fosters students' critical thinking skills through active involvement in contextual projects. As mentioned by the Ministry of National Education (2006:49), the purpose of PKn learning is to enable students to think critically, rationally, and creatively in responding to civic issues, participate intelligently and responsibly in the life of the nation, and interact positively with other nations through the use of information technology. Thus, PjBL is the right choice in instilling civic values with character and contextuality.

RESEARCH METHODS

This research is a type of quantitative research, where the researcher provides a clear and detailed overview of the influence of the Project Based Learning (PjBL) learning model in improving students' critical thinking skills in the Civic Education (PKn) class four subject of SDN 15 Palu. The research approach used is pre-experimental design, because it is not yet fully an actual experiment. The design applied in this study is a one group pre-test–post-test design, which is an experiment that involves only one group without a comparison group. In this design, a pre-test is carried out before the treatment is given, followed by the treatment, and ended with the final test (post-test), so that it is possible to compare the results before and after the treatment to obtain more accurate data.

Table Pretest and Posttest Treatment

Pre test	Treatment	Post test
O ₁	X	O ₂

Information:

O₁ = Pre-test value before treatment

X = Treatment

O₂ = Post test score after treatment

This research was carried out in the fourth grade of SDN 15 Palu which is located on Jl. Suprpto, Palu City, Central Sulawesi Province. The implementation of the research took place in the odd semester of the 2024/2025 school year, precisely on October

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14-18, 2024. The population in this study refers to all fourth-grade students of SDN 15 Palu which totals 25 people, consisting of 14 male students and 11 female students. According to Roflin and Liberty in Susanto et al. (2024), the research population is all the people, objects, or events that the research focuses on. Because the population is relatively small, which is less than 30 people, the sampling technique used is saturated sampling, as explained by Sugiyono (2010), which is a technique in which all members of the population are sampled. In this study, there are two variables, namely the independent variable, namely the Project Based Learning (PJBL) learning model, and the dependent variable, namely students' critical thinking skills in PKN subjects. the results of the learning process. While critical thinking is defined as the ability to analyze information objectively and make decisions based on evidence and logic. This ability is measured in the cognitive realm using a written test instrument in the form of an essay consisting of 10 questions. The type of data used in this study is quantitative data, obtained from student learning outcomes before and after the application of the PJBL model. The data is used to analyze changes or improvements in students' critical thinking skills. The data sources used include primary data and secondary data. Primary data is obtained through direct observation and written tests (pre-test and post-test), while secondary data comes from school documents such as curriculum, grade archives, academic reports, and supporting literature in the form of books, scientific journals, and relevant articles.

The data collection techniques in this study were carried out through tests, documentation, and observations. The test is used to obtain quantitative data related to students' critical thinking skills, using essay questions that have been validated by experts. The test is carried out in two stages, namely pre-test before treatment, and post-test after treatment. Documentation was used as concrete evidence in the form of photos and videos during the research process, including interviews with homeroom teachers. Observation was carried out using interview techniques to dig up information about the condition of the students who were the subject of the research. The research instruments used consisted of structured observations and written tests in the form of essays. The data analysis in this study includes several stages. First, a validity test is carried out to assess the extent to which the instrument is able to measure data from the variables being studied. Validity was tested using the Pearson Product Moment correlation formula. Second, reliability tests were performed to ensure the consistency of the instruments, using Cronbach's Alpha formula and the Spearman-Brown method, with interpretation based on the criteria of Guilford Sundayana (2015), which divided the reliability coefficient into five categories from very low to very high.

Table Reliability Coefficient (r) Criteria

Reliability coefficient (r)	interpretasi
$00, \leq r < 0,20$	Very low
$0,20 \leq r < 0,40$	Low
$0,40 \leq r < 0,60$	Moderate/Fair
$0,60 \leq r < 0,80$	tall
$0,80 \leq r < 1.00$	Very high

Next, a normality test is performed to ensure that the data is distributed normally, using the One Sample Shapiro-Wilk test (also known as the Lilliefors test). If the significance value is greater than 0.05, the data is declared to be normally distributed. For the final data analysis, the Paired Sample T-Test test was used to measure the significant difference between students' pre-test and post-test scores after treatment. The hypothesis tested was whether there was a significant difference in students' critical thinking skills before and after the application of the PJBL model.

Here is the research hypothesis:

H_1 = there is a difference in the project-based learning model for the critical thinking skills of fourth grade students of SDN 15 Palu.

H_0 = There is no difference in the project-based learning model for the critical thinking skills of fourth grade students of SDN 15 Palu.

In addition, N-Gain analysis was also used to measure the improvement of learning outcomes. N-Gain is used to determine the effectiveness of learning methods based on pre-test and post-test scores, with the formula:

$$\text{N-Gain} = \frac{\text{Spotest} - \text{Spretest}}{\text{Sideal} - \text{Spretest}}$$

Information:

Post-test score: The student's test score after participating in learning or intervention.

Pre-test score : Students' test scores before participating in learning or interventions.

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Ideal Score : The highest score that can be achieved in a test.

Table Gain test interpretation

N-Gain Value	Category
$g > 0,7$	Tall
$0,3 \leq g \leq 0,7$	Keep
$g < 0,03$	Low

RESULT

The data from the results of this research was obtained through a research process that has been carried out by the researcher on May 14 to 16, 2025 with the object of the research being students in grade Four A SDN 15 palu with a total of 25 students. The number of students in class Four A is 11 girls and 14 boys. The data collection in this study was carried out by the researcher himself using the project-based learning model. The methods used by the researcher are test, documentation and observation methods. The test method in this study was used to collect data on student learning outcome tests. The documentation method in this study is used as concrete evidence that supports the data collection process. The observation method in this study was used to collect data that supported the research at SDN 15 Palu.

The pre-test or initial test in class Four A was carried out on May 14, 2025 at SDN 15 Palu with a total of 25 students, pre-test is an initial test carried out to be able to determine the ability of students to understand the material of unity and unity within the scope of sub-districts, sub-districts and villages. Before being tested in class Four A, the questions given to students have been tested for validity and reliability, more data can be seen in the table below.

Table Description of class Four A pre-test data

Description	Data pre-test
Subyek	25
Score minimum	30
Maximum score	84
Average score	64,24
Standard deviation	15,940

Based on the data above, it is known that the results of the class Four A pre-test obtained an average score (mean) of 64.24 and a standard deviation of 15.940. The results of the pre-test obtained a minimum score of 30 and a maximum score of 84.

After conducting the pre-test, the researcher then conducts the post-test which is the final test to find out the ability of students to understand the material of unity and unity within the scope of sub-districts, sub-districts and villages and to find out the results of the learning process that has been carried out, more data can be seen in the table below.

Table Description of class Four A post-test data

Description	Data post-test
Subyek	25
Score minimum	52
Maximum score	96
Average score	78,4
Standard deviation	11,972

Based on the results of the final test or post-test in class Four A, whose learning uses the project-based learning model , an average score (Mean) of 78.4 and a standard deviation of 11.972 were obtained, with a minimum score of 52 and a maximum score of 96. The results of the analysis showed that students' understanding of unity and unity in the sub-district, sub-district, and village scopes increased.

After the post-test and post-test data are obtained, a normality test is carried out, the normality test is to find out whether the data obtained has a normal spark plug district or not if the data is normally distributed means that the data can be representative of the population. The normality test was carried out on the data obtained post-test scores using the kolmogrov smirnov formula with calculations assisted by the IBM SPSS statistical 30 program. The test criteria used to measure normality in

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this study are if the sig value is > 0.05 , then the data is normally distributed and if the sig value is < 0.05 , then the data is not normally distributed. The following is a description of the results of the data normality test in class Four A which can be seen in the table below.

Table of Normality Test Results of Class Four A Post-test Data

Data	Saphiro willk		
	statistic	Df	Sig.
Post-test	0,927	25	0,073
Post-test	0,946	25	0,204

Based on the table above, the results of the data normality test using lilliefors (shapiro wilk) with the help of the IBM spss statistic 30 programs, show that all research data have a sig value of > 0.05 . It can be seen that the post-test value of class Four A is 0.073 so that it can be concluded that the data is distributed normally. Because the data is normally distributed, the data analysis can be continued.

After the normality test is carried out, a hypothesis test is carried out where the hypothesis test is a test used to test the veracity of a statement statistically and draw conclusions whether to accept or reject the statement testing the influence of the project based learning (PJBL) learning model on students' critical thinking skills in the fourth grade PKN subject of SDN 15 Palu using the Paired Sample T Test analysis through the SPSS for windows 30 program.

The hypotheses tested in the paired sample T Test analysis are:

Ha: there is an influence of the project based learning (PJBL) learning model on students' critical thinking skills in PKN grade four SDN subjects
15 Hammers.

Ho: no influence of the project-based learning (PJBL) learning model on students' critical thinking skills in classroom PKN subjects
Four SDN 15 Palu.

The hypothesis was carried out at a significance level of 5% (0.05). The results of the paired sample T test analysis with the help of IBM SPSS statistical 30 calculation can be seen in the table below.

Table of Results of the Paired Sample T test

	mean	Std. deviation	Std. Error mean	95% confidence interval of the difference		T	df	Sig. (2tailed)
				Lower	upper			
Post-test- post-test	14,16000	9,36162	1,87232	-18,02429	-10,29571	-7,563	24	<,001

Based on the table above, there is a significant value of the paired sample T test. So Ha was accepted and Ho was rejected. So it can be concluded that the project-based learning (PJBL) learning model affects students' critical thinking skills in the fourth grade PPKN subject of SDN 15 Palu.

DISCUSSION

Based on the results of the initial test (post-test) in class Four A whose learning uses the project based learning (PJBL) model, it shows that the average score of students is 64.24 and the standard deviation is 15.940, and the results of the post-test obtained a minimum score of 30 and a maximum score of 84. Meanwhile, the results of the final test (post-test) are much better than the results obtained in the initial test. The results of the analysis of the post-test data obtained showed differences in students' critical thinking skills in PPKN subjects. From the results of the final test, it was known that the average score of the students was 78.4 and the standard deviation was 11.972 and a minimum score of 52 and a maximum score of 96. This shows that the achievement of learning objectives and students' critical thinking skills increases. The results of the calculation using the paired sample T test, obtained a significant value of $0.001 > 0.05$ so that the Ha and Ho hypotheses were rejected. Based on the results of the research that has been stated above, it is possible to get an idea that the project-based learning model can improve students'

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critical thinking skills in the fourth grade PKN subject of SDN 15 Palu. This means that through the project-based learning (PJBL) model, the problem of students' lack of critical thinking skills can be overcome.

The project-based learning model is a learning strategy that allows students to gain new knowledge and understanding based on their experiences through various presentations. By giving students the freedom to explore learning activities, plan, implement projects together, and ultimately create PJBL products that help develop various skills such as intellectual, social, economic and moral. This statement can be proven from the results of the analysis of student activities obtained showing that students' critical thinking skills have increased. Students feel happy and motivated to participate in learning, develop various student skills and make it easier for students to understand the lessons learned. There is an influence on the project-based learning (PJBL) learning model on students' critical thinking skills in the PKN grade four subject of SDN 15 Palu, this is in line with research that has been carried out by previous researchers, namely Aulia et al. (2024) stating that the project-based learning model or PJBL can improve students' critical thinking skills, so that the results obtained in this study support the research previously.

CONCLUSION

Based on the results of research that has been conducted on the Influence of the Project Based Learning (PJBL) Model in Improving Students' Critical Thinking Skills in the Fourth Grade PKN Subject of SDN 15 Palu, it can be concluded that the Project Based Learning learning model has proven to be effective in improving students' critical thinking skills. This is shown by the increase in the average student score from the pre-test result of 64.24 to 78.4 in the post-test results after the application of the PJBL model. In addition, the results of the normality test show that the data is distributed normally, so that statistical analysis can be continued. Based on the results of data analysis using T test analysis, a significance value of 0.000 was obtained. Because the significance value of the T test $< \alpha$ ($0.000 < 0.05$) was accepted and H_0 was rejected, so it can be concluded that there is an influence of the PJBL project-based learning model on the critical thinking ability of fourth grade students of SD 15 Palu. This improvement shows that the PJBL model provides opportunities for students to be actively involved in the learning process through investigation, teamwork, problem-solving, and product presentation. Students become more motivated, enthusiastic, and able to develop critical thinking skills more optimally. This is reinforced by findings in the field that show that students feel more interested and understand the material better after the implementation of the PJBL model. Thus, the Project Based Learning model is not only able to quantitatively improve student learning outcomes, but also contributes to character development, collaboration skills, and creativity in the learning process.

CONFESSION

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