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Implementation of the project-based learning (PjBL) model in sharpening students' critical thinking as an effort to strengthen the profile of Pancasila students

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ABSTRACT

This study aims to determine the Critical Thinking of students by implementing a project-based learning model in science subjects. This research method uses Descriptive Qualitative method. By using the source triangulation technique to obtain and process data. This research was conducted at SDN Celep 1 Sidoarjo with the primary subject of class teachers and grade IV students, while the secondary subject of this research is the learning outcomes of students obtained from teachers and supporting data in the form of literature. Based on the results of research data analysis through interviews, observations, analysis of the process and student learning outcomes, it shows that learning using projects can improve students' Critical Thinking. In addition, students can find out how to make projects with high precision. Based on the researcher's observations, it can be concluded that each stage of implementing a project-based learning model can develop one of the dimensions of the Pancasila Learner Profile, namely Critical Thinking. So that learners get better information from their learning experience.



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Introduction

Education is defined as the entire learning experience of every person during his or her lifetime (Noor, 2018). According to the Law on the National Education System of the Republic of Indonesia Chapter 1 Article 1 (1), education is a conscious and planned effort to create an environment and learning process so that students can actively develop their mental resilience potential. Self-control, personality, noble character, intelligence and skills needed in society, nation and state (Ristanti, Suri, Choirudin, & Dinanti, 2020). In a broad sense, it can be defined that education is a planned experience that a person does to develop their abilities and potential. Referring to the views of Ki Hajar Dewantara (Musyadad, Hanafiah, Tanjung, & Arifudin, 2022) who said that "Education as a civilizing process, is not only oriented to develop a good person, but also a good society". In the process of civilization, education needs to be oriented towards two views, the first is to create students who can develop themselves, and the second is to create students who can develop and help the surrounding community. In organizing education, there is one component, namely the curriculum. The curriculum is one of the important components in organizing education to achieve educational goals, which is used as a guide in the teaching and learning process.

The curriculum is developed with the aim of improving the quality of education, because the heart of education is the curriculum. According to Fatmawati quoted in (Martin & Simanjorang, 2022) said that the curriculum is a plan that is used as a guide or guide in teaching and learning activities. In Indonesia's education system, education has undergone eleven curriculum changes. Starting in 1947 until now, the Minister of Education and Culture has launched a new curriculum, namely the Merdeka Curriculum. Merdeka Belajar is a new policy initiated by the Minister of Education and Culture Nadiem Anwar Makarim with the aim of improving the same education system, where the transformation of education through the merdeka Belajar program is one of the steps to realize superior human resources in Indonesia who have the Pancasila Student Profile (H. Firdaus, Laensadi, Matvayodha, Siagian, & Hasanah, 2022). The implementation of Merdeka Curriculum itself can create active and creative learning. This curriculum change will be the gateway to a better education, especially in the era of society 5.0 and has freedom, both in freedom of thought and innovation.

The emergence of the independent learning program is a form of educational reform that focuses on cultural transformation, because schools are not just about administration. However, the focus is on innovation and child-centered learning with the hope of becoming graduates who are in accordance with the Pancasila Student Profile (Ineu, Teni, Yadi, Asep, & Prihantini, 2022). This transformative national education system is expected to make citizens able to make changes and empowerment in improving the quality of life of the nation. In this era of rapid globalization, education has become a basic need for society. The Ministry of Education, Culture, Research and Technology of the Republic of Indonesia is currently intensifying that the end of education is the formation of the Pancasila Student Profile which is raised as a guideline in education in Indonesia, as stated in the Vision and Mission of the Ministry of Education and Culture in the Minister of Education and Culture Regulation Number 22 of 2020 concerning the strategy of the Ministry of Education and Culture Year 2020-2024 is the strategic plan of the Ministry of Education and Culture. Formation of Indonesian learners as competent lifelong learners with character in accordance with the values of Pancasila (Wasimin, 2022). This is also reinforced by research conducted by (Simarmata, Yatty, & Fadhillah, 2022) said that the vision and mission is used to realize education in an advanced Indonesia that is sovereign, independent, and has a personality through the creation of Pancasila Students who have several dimensions in it consisting of: (1) Devoted to God Almighty and noble; (2) Global Diversity; (3) Mutual Cooperation; (4) Independent; (5) Critical Reasoning; (6) Creative. The six dimensions are a unity in forming the Pancasila Student Profile.

This research focuses on one of the dimensions of the Pancasila Student Profile, namely Critical Thinking. According to Adi Gunawan (2004) as cited in (Heffrizza Ahmad, 2017) Critical Thinking is the ability to analyze, create, and use criteria objectively and evaluate data. Critical thinking is also one of the higher order thinking skills required in the development of 21st century skills. (Ramos, Dolipas, & Villamor, 2019) also reinforced this and explained that higher order thinking skills are skills that consist of critical and creative thinking, analysis, problem solving, and visualization. In the field of education, Critical Thinking is one of the important factors to be implemented, but in its application, the term is still relatively unfamiliar to most people, especially school residents, but there are still many educational institutions that have not implemented Critical thinking in the learning process. With Critical Thinking, students can solve problems in learning with the right solution. Therefore, the application of Critical Thinking needs to be further developed (Atris Yuliarti Mulyani, 2022).

Learning in Indonesia itself does not encourage students to hone Critical Thinking, because the learning delivered only uses material. as the 2018 Program for International Student Assessment (PISA) results show that Indonesia ranks 74th or 6th from the bottom which includes the literacy skills of Indonesian students with a score of 371 at 74th, math skills with a score of 379 at 73rd, and science skills with a score of 396 at 71st. The PISA data shows that the condition of the ability of students in elementary schools in Indonesia is low. As according to Rahmawati in the quote (Desvianti, 2020) who said that the relatively low TIMSS and PISA scores are certainly caused by several factors, including the low ability of students to deal with questions or tasks that have the same characteristics as TIMSS and PISA questions and require reasoning, contextualization, creativity and reasoning to do the tasks.

Based on the results of observations made by researchers, namely by conducting interviews with grade 4 teachers at SDN Celep 1, it shows that there are still some students who still have difficulty filtering information, processing information and analyzing, to draw conclusions from this information, especially in the IPAS subject of science content. For this reason, the role of the teacher is also very important in guiding students to improve students' Critical Thinking. In accordance with the implementation of the Merdeka Learning Curriculum to provide independent learning rights. Therefore, teachers also need a strategy in its implementation, namely with project-based learning. This is reinforced in the research (Pertiwi, Nurfatimah, & Hasna, 2022) who said that the implementation of the Merdeka Curriculum has a distinctive feature by emphasizing a learner-centered

learning model. For this reason, learning methods that can train students' independence by using the Project Based Learning (PjBL) learning model.

Project Based Learning is a learning model that has been widely developed in developed countries, such as Finland and the United States (Sulistiyani Puteri Ramadhani, Zulela MS, 2021). As according to Fathurrohman (2016: 119) in the quote (Vahlepi, Helty, & Tersta, 2021) said that the project-based learning model is learning that uses activities as a learning tool to gain competence in attitudes, knowledge and skills. The Project Based Learning (PjBL) model is a project-based learning model, and can develop students' critical thinking skills (Triningsih & Mawardi, 2020). This is also reinforced by research (I. A. Pratiwi, Ardianti, & Kanzunudin, 2018) explained that the application of the Project Based Learning model encourages students to complete projects in groups to complete a product, where the group consists of heterogeneous students and is trained to complement each other, which will form cohesiveness and togetherness in completing the project well. In the development of the Project Based Learning model applied to science content in elementary schools, the mission is to equip students to have the ability to solve problems and have creative thinking skills which will be very decisive in creating real work called products (Goldstein, 2016). Generally, the Project Based Learning (PjBL) model can use a learning strategy in the form of a project that is used as a learning tool to achieve several competencies including attitudes, knowledge and skills. So it can be seen that the Project Based Learning (PjBL) model can provide opportunities for students to determine the project to be worked on by formulating problems and responding to them independently.

Based on research conducted by (Kibtiyah, 2022) using the Project Based Learning (PjBL) model can improve students' critical thinking. Whereas, in the research (Triningsih & Mawardi, 2020) found that the Problem Based Learning (PBL) model is more effective and influences students in critical thinking more than the Project Based Learning (PjBL) model. Seeing from some of these studies, researchers have an interest in conducting research with the aim of describing the application of the Project Based Learning (PjBL) model which can help students in honing their Critical Thinking. The Project Based Learning (PjBL) model has an interesting impact on students, in addition to honing creativity, it can also hone Critical Thinking which is one of the important dimensions in Strengthening the Pancasila Student Profile. Innovations made in science subjects in the material of forces around us by integrating the PjBL model by teachers to students in classroom learning. For this reason, the researcher seeks to discuss how the implementation of the Project Based Learning (PjBL) model in honing students' Critical Thinking as an effort to strengthen the Pancasila Student Profile

Method

This research, using Descriptive Qualitative research, is because the problem discussed must conduct an in-depth study of a phenomenon by describing in detail and clearly from the focus to be studied. According to Sugiyono, as cited in (nuning Pratiwi, 2017) Qualitative research is research based on the philosophy of postpositivism, which is used to examine natural objects, where the researcher is the key research instrument. While descriptive qualitative research according to Made Winarta as cited in (Ridwan, Ulum, Muhammad, Indragiri, & Sulthan Thaha Saifuddin Jambi, 2021) explains that descriptive qualitative is a method that involves analyzing descriptions and summaries of various circumstances obtained from collecting information in the form of interviews and direct observation of the problem to be studied. The research subject is the information data obtained during the research process. In this study, the subjects selected were secondary and primary subjects. Primary subjects in this study were fourth grade students of Celep 1 State Elementary School, totaling 29 students who had one of the dimensions in the Pancasila Student Profile, namely Critical Thinking and fourth grade teachers of Celep 1 State Elementary School. Secondary subjects of this study are the learning outcomes of students from class IV teachers of SD Negeri Celep 1 as well as supporting data in the form of literature.

Data collection techniques using source triangulation, conducted by interview, observation, and documentation techniques. The interview technique is used to explore data regarding the ability of students to hone critical thinking in teaching and learning activities, the data is obtained from the fourth grade teacher of SD Negeri Celep 1 and see directly by making observations and observing document data such as learning outcomes, and photos of activities as support. The three techniques were carried out using descriptive qualitative methods. The data analysis used in this research uses the interactive data analysis model expressed by Miles and Huberman which consists of data reduction, data display, and data verification (A'yun & Sujiwo, 2021).

Interviews are used as one of the methods of collecting information by asking questions to research subjects and digging up data on the ability of students. The interview instrument was made for the teacher, which consisted of indicators of formulating the main problem, revealing existing facts, choosing logical arguments, detecting different points of view, and being able to draw conclusions, as according to Ennis in the quote (A. Firdaus, Nisa, & Nadhifah, 2019) with Project Based Learning (PjBL) syntax according to The George Lucas

Education Foundation and Dopplet in the quote (Surahman, Kuswandi, & Wedi, 2019) Starting with the essential question, Creating a Project Design, Creating a Schedule, Monitoring learners and project progress, Assessing results, Evaluating the experience. Because this research tends to aim to analyze a problem holistically, and observe the learning process using the Project Based Learning (PjBL) model to hone students' Critical Thinking.

Results and Discussions

Critical Thinking is one of the important dimensions of implementing the Pancasila Student Profile, which is a character building program for students that is being initiated by the government in education in Indonesia as an effort to foster the noble values of the nation's culture for Indonesian students, especially in implementing the Merdeka Curriculum. The key success factor of the Pancasila Student Profile is the teacher, where the teacher plays an important role in the learning process, including designing programs or implementing learning models. One of the learning models that can be applied is project-based learning. As the results of interviews and observations conducted at SDN Celep 1, the application of the Project Based Learning (PjBL) model is implemented through several stages and preparations made by teachers starting from planning, implementation, and evaluation.

Interviews conducted by researchers with fourth grade teachers at SDN Celep 1 found that the application of the Project Based Learning (PjBL) model begins with planning some teacher preparation. Namely, preparing essential questions that can sharpen students' arguments and points of view. Where the question contains the material to be conveyed and is also general in nature with the aim of knowing the initial knowledge of students. Creating a learning project design, as well as determining the schedule for making learning projects as well as teaching modules that have been prepared by the teacher before is an advanced preparation for the application of the Project Based Learning (PjBL) model. The project design prepared by the teacher is tailored to the material discussed, taking into account the subject matter of the material. To assess students' results, the teacher prepares a project making assessment instrument and a student learning outcomes assessment instrument consisting of several aspects to determine students' Critical Thinking which consists of the function of usefulness, utilization, knowledge, providing arguments, and conveying points of view. The teacher also conducts a preparation stage for the evaluation of students' learning outcomes, in the form of questions that cover the subject matter given, as well as problem solving to find out the results of students after making the project.

The implementation of the Project Based Learning (PjBL) model is carried out according to a predetermined schedule, and the project design is in the form of a spring boat from a bottle as the teaching module that has been made. The first step of learning begins with asking basic questions to focus learners on the problem to be solved. With these questions, it is hoped that students can find answers and find appropriate and relevant solutions independently, so that they can hone students' Critical Thinking, because with independent learning, it can increase curiosity about the material being studied (Rifky, 2020). This is evidenced by the observations made by the researchers, where the teacher asked questions related to spring force before the learning began. The project creation stage is carried out in groups according to the issues raised with structured and organized steps.

Project-based learning helps learners to create detailed projects, because at this stage learners have to combine known information and turn it into a project. From the knowledge that has been previously obtained by learners can help to solve problems according to their point of view. The project creation stage can hone Critical Thinking and creativity of learners to develop and innovate. As according to (Pope & Sumilat, 2021) in (Fajariyanti, Sumilat, Paruntu, & Poluakan, 2022) that project activities can help learners build knowledge based on the experience gained. In addition, the Project Based Learning (PjBL) model also stimulates the creativity of students to be able to produce a maximum project.

During the project creation process, the teacher has an important role, one of which is to monitor students and the progress of the project, by directing students to find solutions to these problems. Learners are directed to carry out the stages in making projects in a row with the aim of knowing the understanding of students in solving problems, namely by finding answers independently. With the independence of students in solving these problems, teachers can find out the Critical Thinking of students, which will later be used as an assessment. Both the assessment of project creation which consists of uses and functions, as well as the assessment of student learning outcomes which include problem solving, providing a point of view, presenting arguments, and presenting conclusions obtained from making the project.

Based on the results of interviews conducted by researchers with the fourth grade teacher of SDN Celep 1, the application of the Project Based Learning (PjBL) model is carried out until the evaluation stage. Where the evaluation stage is carried out by the teacher by providing opportunities for students to discuss the problems

given, discussions are carried out between groups by presenting the results of problem solving, and presenting the arguments of each group. While other groups are also given the opportunity to evaluate each other's project results from the presenting group to find out the shortcomings contained in the group by asking questions or providing input. Apart from providing opportunities for discussion, teachers also provide description questions that hone students' Critical Thinking, of course the questions given contain the subject matter and problem solving, so that students can describe according to their point of view. This is evidenced by the observations that have been made, that students have high enthusiasm in discussion activities in the form of presenting arguments and conveying points of view from each group. This stage is a teacher's assessment to determine the Critical Thinking of students based on these aspects until the final stage where students can conclude the results of the problem and how to solve the problems raised.

Project Based Learning (PjBL) is one of the learning models that produces a project from the problems given. Learners are trained to find their own answers. It is proven through observations made by researchers that learning using the Project Based Learning (PjBL) model is more meaningful because students not only know about the content of the material, but can solve problems independently. Based on the evaluation results given by the teacher to students, it shows significant learning outcomes. The increase can be seen from the Critical Thinking of students who have been able to explain the background of the problem, provide appropriate reasons and arguments, identify the causes of a problem, provide a point of view, conclude the consequences of the problem, and provide solutions to provide conclusions. This learning model can also encourage learners to improve communication and collaborate with other learners to express their arguments.

Based on the description above, it can be concluded that project-based learning can improve students' critical thinking and act effectively and systematically. With this effectiveness, students become more active in learning activities, as according to (Moh Rahra, Arbie, & Buhungo, 2021) that the project-based learning model proved effective in improving students' learning outcomes with a high accuracy score. This shows that the implementation of Project Based Learning (PjBL) in the Merdeka Curriculum is well implemented and can implement one of the dimensions of the Pancasila Student Profile, namely Critical Thinking. As quoted from (Uktolseja, Nisa, Arafik, & Wiarsih, 2022) that one of the ways that can be done to implement the Pancasila Learner Profile for students is by introducing activities in the form of projects that can improve students' skills. This research illustrates that the application of the Project Based Learning (PjBL) model can hone students' Critical Thinking in learning, especially in the application of the Pancasila Student Profile.

The findings of this study are in line with the theory presented by (Triningsih & Mawardi, 2020) that this project-based learning model can develop students' critical thinking skills. In this learning model, students can develop projects either independently or in groups to produce a product. The product produced in this learning is a spring ship from a bottle that students analyze. In addition, the increase in Critical Thinking in the application of the Project Based Learning model is in line with several previous studies. Like the research conducted (Fitriani & Istianti, 2017) shows that the learning results using Project Based Learning (PjBL) have increased to an average of 57.6 with a low category in cycle I, then in cycle II it increased to 70.83 with the same category, and in cycle III the average student score increased to 83 with a high category. Other research also shows that there is an increase in learning outcome skills by using the Project Based Learning (PjBL) model as the findings from (Aini, Ridianingsih, & Yunitasari, 2022) Saying that through project-based learning can improve the results of students' critical thinking skills, these skills are measured using 6 indicators so that the average score is 96.1% with a very good category.

Conclusions

Based on the explanation above, it can be concluded that the Project Based Learning (PjBL) model has a significant impact on the application of the Pancasila Learner Profile in the Merdeka Curriculum, where the model can hone one of the dimensions of the application of the Pancasila Learner Profile, namely Critical Thinking. This is evidenced by the learning process carried out in class IV SDN Celep 1, especially in science subjects, which can help students be more active and improve learning outcomes during learning activities. The improvement in learning outcomes is seen from the Critical Thinking of students who are able to explain the background of the problem, provide appropriate reasons and arguments, identify the causes of a problem, provide a point of view, conclude the consequences of the problem, and provide solutions to provide conclusions.

Increasing students' Critical Thinking cannot be separated from the teacher's role in creating a learning model. The learning model applied must involve students actively, starting from problem discovery to problem solving to getting results in the form of products or projects. The Project Based Learning (PjBL) model helps students to be more confident in communicating their ideas and arguments verbally based on the results of the

project. This model is one of the effective learning by involving students either independently or in groups, to solve the problems raised starting with making observations, analyzing problems, and finding solutions. With the results of this study, it is hoped that it can provide an overview of the effectiveness of the application of the project-based learning model on Critical Thinking of students in learning activities, especially in the application of the Pancasila Student Profile in the Merdeka Curriculum.

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