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Analysis of the effectiveness of project-based learning in social studies learning to foster empathy and environmental awareness in elementary school students

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ABSTRACT

This research aims to apply the Project Based Learning (PjBL) learning model in Social Sciences (IPS) subjects at the elementary school level as an effort to increase students' empathy and environmental awareness to support the achievement of Sustainable Development Goals (SDGs) 13 related to action on climate change. This study was conducted using a literature review approach that included various scientific articles and relevant academic sources. The results of the study show that the PjBL model is effective in increasing student active participation, building concern for the environment, and developing social empathy. Through contextual projects related to environmental issues, students not only understand social studies concepts in a more meaningful way, but also internalize character values that support sustainable development. These findings reinforce the importance of integrating project-based learning approaches in social studies curricula to develop a generation that is environmentally conscious and globally competitive.



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Introduction

Education is an important foundation in shaping the character and insight of students from an early age. Through contextual and meaningful learning, students are not only invited to understand the subject matter, but also directed to become individuals who care about the social environment and the surrounding nature. One of the subjects that has great potential in shaping this character is Social Sciences (IPS), because the scope of the material touches on aspects of society, nation, and state life.

As global challenges emerge, education in the 21st century requires learning methods that can encourage students to think critically, collaborate, and solve real problems. One approach that fits this need is Project Based Learning (PjBL), which is a learning model that focuses on active student involvement through the completion of concrete projects. PjBL not only contributes to the understanding of concepts, but also helps instill social values such as empathy and responsibility towards the environment. Several studies have proven the effectiveness of the PjBL model in the context of primary education. Research by Putri and Rezania (2024) shows that the application of PjBL in social studies learning significantly improves ecological literacy and student learning outcomes. Contextually designed projects allow students to develop awareness of environmental and social issues around them, including the importance of preserving nature (Putri and Rezania, 2024).

However, there is still a gap in research that specifically explores the relationship between the application of PjBL in social studies learning and strengthening affective aspects such as empathy and environmental awareness, especially in the framework of achieving the Sustainable Development Goals (SDGs), especially SDG 13 which focuses on handling climate change. Most studies emphasize more on cognitive aspects and academic learning outcomes, while the dimensions of students' character and social concern are still rarely touched in depth in literature reviews. Santoso et al. (2023) revealed that there is still a lack of understanding of the impact of project-based learning on environmental awareness and affective values, especially piety in elementary school students, so further research is needed that integrates affective and sustainability aspects in contextual learning.

Therefore, this article is compiled to comprehensively review the literature that discusses the integration of PjBL in social studies learning in elementary schools, focusing on efforts to foster students' empathy and environmental awareness as a contribution to the achievement of SDGs 13. This study is expected to enrich theoretical understanding while providing a direction for learning practices that are more oriented towards developing the character of caring for the environment.

Method

This study uses a literature review approach (library research) which aims to collect, analyze, and synthesize information from various written sources related to the topic "Social Studies Based Learning to Increase Empathy and Environmental Awareness in Supporting SDGs 13". This method provides an opportunity for researchers to explore and understand existing concepts without the need to collect field data directly.

According to Waruwu (2023), literary studies are a systematic method of identifying, emerging, and interpreting all research relevant to a particular research question, topic, or phenomenon being researched. This approach is very appropriate when researchers want to build a theoretical framework or understand the latest developments in a field of study. The literature sources used in this study include scientific journal articles published in the last five years as well as recent academic books that discuss research methods and project-based learning.

The data collection process is carried out through searching academic databases such as Google Scholar, DOAJ, and Garuda Dikti. Inclusion criteria include publications that are relevant to the topic, have academic credibility, and are available in full access. The collected data were then qualitatively descriptively analyzed to identify key themes, research gaps, and practical implications of previous findings. With this approach, it is hoped that the research can contribute to understanding how project-based social studies learning can foster empathy and environmental awareness in elementary school students, as well as support the achievement of SDGs 13.

Results and Discussions

Through a literature review of various relevant studies, it was found that the application of the Project Based Learning (PjBL) learning model in social studies subjects is effective in fostering empathy and environmental awareness in elementary school students.

Social Science (IPS) learning in elementary schools has great potential to be used as a relevant and meaningful environmental education tool. One approach that has proven effective in achieving this is Project Based Learning (PjBL). This method not only contributes to improving students academic learning outcomes, but also builds empathy, social awareness, and environmental awareness in line with efforts to achieve the Sustainable Development Goals (SDGs), specifically goal 13 related to addressing climate change. Taufik and Vidya's research (2025) shows that the implementation of PjBL through the 3R (Reduce, Reuse, Recycle) project is able to significantly increase the attitude to care for the environment of grade 5 SD/MI students. In the study, students are directly involved in activities related to waste management, so that they can concretely understand the impact of their behavior on the environment. This kind of real activity creates a reflective space where students not only understand theoretical concepts, but also internalize positive values and attitudes towards nature. The implementation of PjBL with the 3R model also encourages lifelong learning from an early age.

In line with these findings, Munisah et al. (2019) emphasized that the PjBL approach in social studies learning makes a positive contribution to creating green schools. Through environment-based projects, students are not only given materials on sustainability, but are also invited to actively participate in creating an environmentally friendly school environment. This activity also develops a school culture that supports ecological values. Thus, PjBL functions as a pedagogical strategy that builds environmental awareness collectively, involving teachers, students, and the school community as a whole.

Furthermore, research conducted by Siti Nur Janah et al. (2024) shows that the application of the PjBL model in IPAS (Natural and Social Sciences) subjects not only plays a role in increasing students' environmental awareness, but also has a positive effect on their learning outcomes. This approach supports the view that contextual learning related to daily life can strengthen student engagement and motivation. This is in line with the theory of constructivism which emphasizes the importance of real experience in building knowledge and understanding.

Tabel 1 Research PjBL

Research Title	Key Findings
The Influence of the Project Based Learning (PjBL) Method through the 3R Project on the Environmental Care Attitude of Grade 5 Students in Elementary / MI. (Taufik & Vidya., 2025)	The implementation of Project Based Learning (PjBL) through the 3R project has proven to be effective in increasing students' environmental awareness in grade 5 SD/MI.
Environmental Education through Social Studies Learning with a Project Based Learning Approach in Creating Green Schools. (Munisah, et al., 2019)	The PjBL approach in social studies learning is effective in increasing students' environmental awareness and supporting the creation of green schools.
Efforts to Improve Environmental Awareness and Learning Outcomes Through Project Based Learning Model in Science Subjects Class V SD Negeri 1 Karangnanas. (Siti Nur Janah, et al., 2024)	This study reveals that the application of the PjBL model can improve environmental awareness and student learning outcomes in social studies lessons at the elementary school level.
Social Studies Learning Design Based on Project Based Learning at the Elementary/MI Level. (Nur Fariha Maulidia, et al., 2023)	This article discusses the design of social studies learning based on PjBL at the elementary/middle school level, which can increase students' creativity and involvement in learning, as well as build character values such as empathy and concern for the environment.
Application of Project-Based Learning on Waste Management Topics to Improve Sustainability Literacy of Students Affected by the Earthquake. (Mahesa Ayu, et al., 2023)	The purpose of this study is to determine the impact of the Project Based Learning model on students' learning outcomes and environmental awareness in social studies subjects in elementary schools. The findings of the study show that the use of the PjBL model is able to significantly improve students' learning outcomes and environmental awareness.

On the other hand, in the context of designing a curriculum, Nur Fariha Maulidia et al. (2023) proposed a social studies learning design based on PjBL, which not only aims to improve students' understanding of concepts, but also to develop creativity, collaboration skills, and character values such as empathy and concern for the environment. Learning built with this approach encourages students to become active learners and problem-solvers who are sensitive to social and ecological issues. Character strengthening through project-based social studies learning is particularly relevant in the context of 21st century education that demands integration between cognitive and affective aspects.

In addition, research by Mahesa Ayu et al. (2023) strengthens the evidence of the effectiveness of PjBL in shaping students sustainability literacy, especially in contexts affected by natural disasters. In this study, students are invited to understand the issue of waste management as part of post-disaster recovery efforts. As a result, there has been a significant increase in students' awareness and understanding of how important it is to the environment. The study also confirms that PjBL has the flexibility to be applied in a variety of social and geographical contexts, including in disaster-affected areas.

Based on the five studies, it can be concluded that the implementation of Project-Based Learning-based social studies learning consistently shows a positive impact on the development of environmental care attitudes, improving learning outcomes, and shaping students' character from an early age. This method allows for meaningful learning that not only emphasizes cognitive aspects, but also encourages active participation, collaboration, and real action in dealing with environmental issues. Therefore, the integration of PjBL in the

social studies curriculum at the elementary school level is a strategic step in equipping the young generation with relevant competencies and values to answer global challenges in the future, especially in the context of climate change and environmental sustainability.

Conclusions

Based on the analysis of five studies, it can be concluded that the application of the Project Based Learning (PjBL) learning model in Social Sciences (IPS) subjects at the school level has proven to be effective in increasing environmental awareness, caring for nature, and student learning outcomes. The PjBL approach offers a contextual and participatory learning experience, where students are directly involved in projects related to environmental issues, such as waste management, 3R projects, and initiatives to create green schools. PjBL not only equips students with academic knowledge, but also fosters character values such as empathy, social responsibility, and concern for environmental sustainability, which are highly relevant to achievement. The 13th Sustainable Development Goals (SDGs) on climate change mitigation. In addition, this approach is able to increase learning motivation, active student involvement, and build an environmentally friendly school culture. Therefore, Project Based Learning is a strategic approach in social studies education in elementary schools to form a young generation that is not only academically intelligent, but also has ecological awareness and readiness to become agents of change in the future.

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