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Application of Project-Based Learning Model to Increase Student Activity in Cultural Heritage Materials in Grade V of Elementary School

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Abstract
The low activity of students in learning Natural and Social Sciences, particularly in Cultural Heritage materials, remains a common problem in elementary schools. Passive learning has been identified as one of the main factors limiting student engagement. This study aims to improve the activeness of grade V students at an elementary school in Malang City through the application of the Project-Based Learning model in Cultural Heritage materials. The research employed classroom action research using the Kemmis and McTaggart spiral model, conducted in two cycles, each consisting of planning, implementation of actions, observation, and reflection. The study involved 28 students in grade V. Data were collected through observation, interviews, formative tests, and documentation, and were analyzed descriptively, quantitatively, and qualitatively. The results indicated that the application of the Project-Based Learning model increased student activity, with activity percentages rising from 42.8 percent in the pre-cycle stage to 78.5 percent in the first cycle, and reaching 91 percent in the second cycle. These findings demonstrate that the Project-Based Learning model can effectively enhance students' engagement in science learning, particularly in contextual materials such as Cultural Heritage, while supporting the optimization of project-based learning implementation at the elementary school level.

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Introduction

Education holds a strategic role in preparing a generation that is intelligent, possesses strong character, and is adaptive to the challenges of the twenty-first century. The era of globalization and the Fourth Industrial Revolution demands a transformation in education that goes beyond the mere transfer of knowledge, emphasizing the development of critical thinking, creativity, collaboration, and communication competencies (Trilling & Fadel, 2009). A key indicator of successful twenty-first century learning is student activeness. Activeness encompasses not only physical participation but also mental and emotional engagement in understanding, exploring, and constructing knowledge independently and collaboratively (Mulyasa, 2018). Therefore, contemporary learning is expected to implement approaches that actively foster student involvement in all stages of the learning process. Such approaches are essential to ensure that students are not passive recipients of information but are engaged in meaningful and transformative learning experiences.

However, the reality in the classroom indicates that student activeness in learning remains a significant challenge at various levels of education, particularly in elementary schools. Many classrooms are still dominated by conventional lecture methods, which position students as passive recipients of information (Dewi, 2019). Research by Arsyad (2021) revealed that more than fifty percent of elementary school students displayed low levels of participation in learning activities that did not actively engage them. This condition has negatively affected both students' understanding of the material and their motivation to learn. Such a situation presents a serious challenge for teachers to develop a participatory and meaningful learning environment that aligns with the demands of the independent curriculum and the Pancasila student profile. Addressing this challenge requires innovative teaching strategies that can stimulate students' active involvement and foster deeper comprehension and engagement in the learning process.

This situation becomes even more complex in the subject of Natural and Social Sciences, which is an integrative subject in elementary education. Natural and Social Sciences combine concepts from both nature and society, requiring a learning approach that is active, contextual, and based on hands-on experiences (Rahmawati & Fauziah, 2020). However, initial observations in grade V at an elementary school in Malang City revealed that only 42.8 percent of students were actively engaged in learning social studies, particularly in Cultural Heritage topics. In fact, these materials should provide abundant opportunities for students to participate in exploratory activities that connect with their environment and local culture. The low level of engagement indicates the need for learning strategies that can stimulate curiosity, critical thinking, and meaningful interaction with the subject matter.

The issue of low student activity is closely linked to the dominance of conventional teacher-centered learning approaches. This approach limits opportunities for students to participate actively because learning tends to be one-way, with the teacher serving as the primary source of information while students remain passive listeners (Sanjaya, 2020). Such a model provides minimal space for students to generate ideas, ask questions, collaborate with peers, or engage in problem-solving activities. Several studies have confirmed that this type of learning does not align with the characteristics of twenty-first century learners, who require active engagement and meaningful learning experiences (Pratama & Wulandari, 2021).

Addressing this issue necessitates the adoption of innovative, student-centered strategies that encourage participation, critical thinking, and collaborative learning.

To address this issue, Project-Based Learning has emerged as an alternative learning model that can promote student activity through engagement in real-world projects. Project-Based Learning positions students as active participants in designing, implementing, and evaluating learning projects that are based on contextual problems (Arends, 2014). This model emphasizes the learning process through hands-on experiences and collaborative teamwork in completing projects that are relevant to students' lives. By applying the principle of learning through doing and creating, Project-Based Learning is believed to enhance students' emotional, cognitive, and social engagement throughout the learning process. Such an approach not only fosters active participation but also develops critical thinking, problem-solving skills, and the ability to work collaboratively, which are essential competencies for twenty-first century learners.

Several studies have demonstrated the effectiveness of Project-Based Learning in enhancing students' learning activity and motivation. Kusuma (2022) found that the implementation of Project-Based Learning in grade V of elementary school significantly increased students' active participation in discussions, asking questions, and expressing ideas. Similarly, Syamsudin and Rochmawati (2020) showed that projects based on environmental issues and local culture could boost students' enthusiasm for learning and foster a sense of ownership over the learning materials. Furthermore, Rizky (2021) emphasized that Project-Based Learning contributes to the development of twenty-first century skills, including critical thinking, collaboration, creativity, and communication, enabling students to be active not only physically but also cognitively in thinking processes and problem-solving. These findings underscore the potential of Project-Based Learning to create a more engaging, meaningful, and skill-oriented learning environment for elementary school students.

Nevertheless, the implementation of Project-Based Learning in elementary schools is not without challenges. Yuliani, Sari, and Hanafiah (2022) noted that obstacles include aligning project planning with students' abilities, managing time effectively, and ensuring that teachers can transform their roles into facilitators and supervisors. Additionally, the readiness of school resources, the availability of learning media, and parental involvement are critical factors that influence the success of Project-Based Learning implementation in the elementary school context. Therefore, it is essential to adopt an implementation strategy that is both appropriate and adaptable to the specific conditions of each school. Addressing these challenges is crucial to maximize the benefits of Project-Based Learning and to ensure that students can engage meaningfully in project-based activities.

Based on these issues, this study aims to implement and examine the effectiveness of the Project-Based Learning model in increasing students' activeness in learning Natural and Social Sciences, particularly in Cultural Heritage materials, in grade V at an elementary school in Malang City. This research is expected to address a gap in previous studies, which have provided limited discussion on the application of Project-Based Learning to the Cultural Heritage theme in elementary education. Theoretically, this study contributes to expanding the repertoire of active learning strategies in elementary schools. Practically, the findings can serve

as a reference for teachers, school principals, and curriculum developers in selecting innovative learning models that enhance students' active engagement in thematic learning processes at the elementary school level.

Method

This study employed Classroom Action Research to address learning problems directly in the classroom through a systematic and continuous cycle of improvement actions. This approach was selected because it allows teachers to reflect on ongoing learning practices and design interventions tailored to students' needs, making it particularly suitable for thematic subjects such as Natural and Social Sciences, which require active student involvement. The research followed the Kemmis and McTaggart spiral model, consisting of four stages in each cycle: planning, action implementation, observation, and reflection. The study was conducted in two cycles, preceded by a pre-cycle to map students' initial activeness levels. The subjects were twenty-eight fifth-grade students at an elementary school in Malang City during the even semester of the 2024/2025 academic year. Observations during the pre-cycle indicated that students' activeness was 42.8% under conventional learning conditions. Based on these results, a Project-Based Learning tool featuring a simple Cultural Heritage project was designed for the first cycle. Actions involved group work to collect local cultural heritage data, with student activity observed during discussions and data collection. Reflections were conducted to evaluate outcomes and identify obstacles, which informed improvements for the second cycle, where the project was expanded to include visual products such as posters and multimedia presentations. Data collection instruments included observation sheets, interview guides, documentation, and formative tests, all validated by two experts through expert judgment. Data were analyzed descriptively, qualitatively, and quantitatively using percentage analysis of student activity in each cycle. Triangulation of sources and techniques was employed to strengthen data validity by comparing observation results, interviews, project documentation, and test scores, ensuring consistency and reliability of the findings (Sugiyono, 2020). Teachers acted as implementers, facilitators, observers, and reflection analysts to determine improvements in each cycle.

Results and Discussion

Results

This classroom action research was conducted in two cycles, beginning with a pre-cycle stage. Each cycle consisted of four stages: planning, action implementation, observation, and reflection. Data on student activeness were collected using observation sheets during the Natural and Social Sciences learning process, focusing on Cultural Heritage materials. The observation results indicated that student activeness increased at each stage, showing progress from the pre-cycle to the first cycle, and further improvement from the first cycle to the second cycle. These findings suggest that the applied interventions positively influenced students' engagement throughout the learning process.

In the pre-cycle stage, learning was still conducted using conventional methods, primarily lectures and question-and-answer sessions. Observations indicated that out of twenty-eight students, only twelve students, or 42.8 percent, actively participated in learning activities, while the remaining sixteen students were largely passive. Students primarily

assumed the role of listeners, showed limited involvement in discussions or question sessions, and demonstrated little interest in engaging with the learning process. This situation provided the basis for implementing corrective actions through the application of the Project-Based Learning model in the first cycle, aiming to increase student engagement and active participation.

Following the implementation of the Project-Based Learning model with a simple exploration project on local Cultural Heritage, student activeness showed a significant increase. Observations during the first cycle revealed that twenty-two students, or 78.5 percent, were actively engaged in learning activities, reflecting a 35.7 percent improvement compared to the pre-cycle stage. Students demonstrated enthusiasm in group work, actively participated in discussions, and shared information about the cultural heritage they explored. However, six students remained less active, showing passivity during group discussions and following instructions without demonstrating initiative. This observation highlighted areas for further improvement in the second cycle to ensure more consistent student engagement.

Before presenting the data in tabular form, it is important to explain that the comparison of student activity at each stage can be observed in Table 1. The table illustrates the distribution of active and inactive students, along with their respective percentages, at each stage of the learning process. This presentation allows for a clear visualization of the progress in student engagement from the pre-cycle to the second cycle.

Table 1. Comparison of Student Activity

Phase	Action	Participants Educate Active (*f*)	Participants Educate Inactive (*f*)	Percentage Activeness (%)
Pre-Cycle	Conventional learning, projectless lectures	12	16	42.8%
Cycle I	Early application of the PjBL model, a simple exploration project	22	6	78.5%
Cycle II	Strengthening PjBL, project more Complex and presentation of results	27	1	91%

In the second cycle, improvements were implemented by designing more challenging projects, including the creation of posters and multimedia presentations based on cultural heritage explorations. Additionally, the range of student information sources was expanded to include interviews with parents and local residents. Observations indicated a further significant increase in student activeness, with twenty-seven students, or 91 percent, actively participating in learning activities, including group discussions, project development, and presentation of results. Only one student remained less fully engaged, although their level of participation had improved compared to the previous cycle. The increase of 12.5 percent from the first to the second cycle demonstrates that more challenging projects and the incorporation of visual media effectively enhanced student motivation and engagement in the learning process.

To provide a visual representation of the progression of student activeness from the pre-cycle to the second cycle, the data are presented in the form of a graph below. This visualization

clearly illustrates the improvement in student engagement at each stage of the learning process, highlighting the effectiveness of the implemented Project-Based Learning interventions.

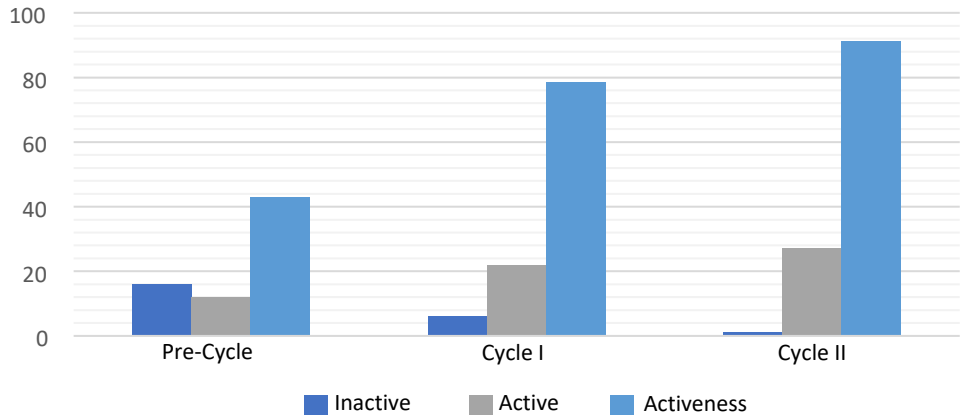

Figure 1. Student Activity Development Chart

The graph illustrates a progressive increase in student activeness, rising from 42.8 percent in the pre-cycle to 78.5 percent in the first cycle, and reaching 91 percent in the second cycle. This trend clearly demonstrates the positive impact of the Project-Based Learning interventions on enhancing students' engagement throughout the learning process.

This increase indicates that the Project-Based Learning model is effective in enhancing students' active involvement in learning Social Science, particularly in Cultural Heritage materials. The quantitative data obtained from observation sheets were further supported by anecdotal records documenting students' enthusiasm during project activities. For instance, one student expressed, "It's exciting, because I can find out the culture in my village and make posters with friends." These findings suggest that Project-Based Learning not only promotes physical engagement but also strengthens students' emotional and social involvement, fostering a more holistic and meaningful learning experience.

Discussion

The observed increase in student activity during this study demonstrates that the Project-Based Learning model is effective in promoting active engagement in Social Studies, specifically in Cultural Heritage materials. The rise in activity percentages from 42.8 percent in the pre-cycle to 78.5 percent in the first cycle, and reaching 91 percent in the second cycle, indicates that Project-Based Learning can foster a participatory and enjoyable learning environment. These findings are consistent with the research conducted by Ananda and Sari (2021), which reported that Project-Based Learning effectively enhances the active involvement of elementary school students in Social Studies subjects, supporting the model's suitability for promoting engagement in thematic learning contexts.

The success of Project-Based Learning in this study is supported by several key factors, including the presence of meaningful projects directly related to students' lives, the role of teachers as facilitators actively guiding the learning process, and the incorporation of visual media and multimedia presentations in the second cycle. These factors reinforce the findings of Fadilah and Suprapto (2020), who noted that Project-Based Learning fosters twenty-first century skills, including communication, collaboration, creativity, and critical thinking.

Furthermore, projects based on local culture have proven effective in cultivating students' sense of belonging and cultural identity, as highlighted by Mustika and Kurniawan (2019), because students not only learn about culture but also experience a personal connection and identification with it.

Although the results of this study were positive, the implementation of Project-Based Learning in elementary schools is not without challenges. The obstacles encountered included differences in students' abilities during group work, limited time for project completion, and teachers' readiness to design projects tailored to students' characteristics. This finding aligns with the research of Yuliani, Sari, and Hanafiah (2022), who noted that the implementation of Project-Based Learning in elementary schools often faces challenges related to project planning and time management. In this study, these challenges were addressed through reflective practices after each cycle and by simplifying project instructions to match students' abilities, ensuring that all students could actively participate and benefit from the learning process.

Local contextual reinforcement played a significant role in the success of Project-Based Learning in this class. By utilizing projects centered on local Cultural Heritage, students felt a stronger connection to the material, demonstrated enthusiasm, and developed pride in the cultural wisdom present in their environment. This finding aligns with Ramadhani et al. (2017), who noted that projects based on the social environment can foster emotional attachment and enhance students' motivation to learn. Additionally, the teacher's role as a facilitator—remaining active in guiding and directing group discussion dynamics without dominating the process was also a key factor contributing to the success of the learning activities in this study.

Overall, the findings of this study reinforce previous research indicating that the Project-Based Learning model is an effective approach to enhancing students' activeness in thematic learning at the elementary school level. This model not only promotes active participation but also provides learning experiences that are meaningful, contextual, and directly relevant to students' everyday lives. By engaging students in real-world projects, Project-Based Learning supports both cognitive and socio-emotional development, fostering a more holistic and engaging educational environment.

Conclusion

This study concludes that the implementation of the Project-Based Learning model is effective in enhancing students' activeness in learning Cultural Heritage materials in grade V of elementary school. Over two cycles of action, student activeness increased from 42.8 percent in the pre-cycle to 91 percent in the second cycle. The application of Project-Based Learning, which allows students to explore, create, and present project outcomes, has been shown to improve students' motivation, active participation, and collaboration skills in learning Natural and Social Sciences. These findings recommend Project-Based Learning as an effective and relevant strategy for thematic learning in elementary schools, particularly in promoting local culture-based education. However, successful implementation requires consideration of teachers' readiness in designing contextual projects and the availability of adequate supporting facilities, ensuring that projects can be conducted optimally and consistently across various elementary school settings.

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Authors' Note

The authors declare that there is no conflict of interest regarding the publication of this article. The authors confirmed that the paper was free of plagiarism.

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