

Utilizing Mini Garden Project Media and Project-Based Learning to Increase Elementary School Students' Interest in Learning Science

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Abstract

Science instruction in elementary schools often remains teacher-centered, resulting in low student engagement and interest; this is evident in the teaching of plant-related topics to fifth-grade students at SDN Unyur. This study aims to describe the implementation of science instruction using the "Mini Garden Project" medium integrated with the Project-Based Learning (PjBL) model, to assess student learning interest following this implementation, and to identify supporting and inhibiting factors. A qualitative descriptive approach was employed. Data were gathered through semi-structured in-depth interviews, non-participant observation, and document analysis involving fifth-grade teachers and students at SDN Unyur. The data were subsequently analyzed using the Miles and Huberman interactive model, comprising data reduction, data display, and conclusion drawing/verification. The results indicate that instruction was conducted in accordance with the PjBL syntax ranging from defining the fundamental question to evaluating the experience and successfully boosted student learning interest, as evidenced by heightened attention, curiosity, engagement, active participation, and enthusiasm. Supporting factors included school backing, a suitable environment, and the availability of tools and materials, whereas inhibiting factors included time constraints and weather conditions. The study concludes that integrating an environment-based learning medium with the project-based learning model is effective in enhancing elementary students' interest in science learning.

Keywords

Learning Interest; Learning Media; Mini Garden Project; Science Instruction; Project-Based Learning



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INTRODUCTION

Education plays an important role in developing human potential, abilities, skills, and character, in line with the mandate of Law of the Republic of Indonesia Number 20 of 2003 concerning the National Education System which emphasizes learning that actively involves students. One of the subjects that plays an important role in basic education is Natural Sciences (IPA), which not only emphasizes the mastery of concepts but also the process of discovery, observation, experimentation, and problem solving in daily life.

In fact, science learning in elementary schools still often uses conventional teacher-centered methods, so students are less active and easily feel bored. This condition is also found in grade V students of SDN Unyur, especially in plant materials. Based on initial observations, learning is still dominated by package books and lecture methods, while concrete and environment-based learning media have not been utilized optimally. As a result, students have difficulty understanding abstract concepts and lack enthusiasm for learning.

One of the learning media that can overcome these problems is the Mini Garden Project, which is an environment-based learning media that utilizes planting and caring for plants as part of the learning process. Through these activities, students gain hands-on learning experience so that abstract science concepts become more concrete and easy to understand, as well as in accordance with the characteristics of elementary school students who are at the concrete operational stage.

In order for the implementation of the Mini Garden Project to run more targeted and systematic, the media is combined with the Project Based Learning (PjBL) model, which is a learning model that places students as the center of learning through project activities related to real problems. Kurniawati (2021) and Fitriani (2022) explained that the use of Mini Garden as a learning medium is able to help students understand plant material more concretely through direct practical activities. This research integrates the Mini Garden Project with PjBL so that the learning process becomes more structured and oriented towards project completion.

Various previous studies have shown that the Project Based Learning model has a positive effect on students' learning interest in science learning (Harmawati et al., 2022; Tussyadi et al., 2021), and that student involvement in observation and hands-on activities is able to increase students' attention, motivation, and enthusiasm in science learning (Rahmadani et al., 2023). Other research also shows that the application of PjBL to science and science learning in elementary schools has a positive impact on students' learning outcomes and science literacy (Ardiansyah et al., 2023; Nency, 2023; Della & Dahlan, 2024), as well as on the learning interest of grade V students in science content (Vazriyah et al., 2025). The use of the right learning environment and learning media has also been proven to foster the interest in learning IPAS of elementary school students (Mambrasar et al., 2026). However, research that specifically integrates Mini Garden Project media with the Project Based Learning model to increase students' interest in learning is still relatively limited.

Based on this description, this study aims to (1) describe the implementation of science learning through the use of Mini Garden Project media with the Project Based Learning model in grade V students of SDN Unyur; (2) describe the learning interest of grade V students of SDN Unyur in science learning after using these media and models; and (3) describe the supporting factors and inhibiting factors in its use. This research is expected to contribute to the development of more active, innovative, contextual, and meaningful science learning in elementary schools.

METHODS

This study uses a qualitative approach with a qualitative descriptive research type referring to Creswell and Poth (2023), which aims to understand and describe in depth the phenomenon of science learning through the use of Mini Garden Project media in increasing students' interest in learning. The research was carried out at SDN Unyur, Serang City, Banten Province, in the even semester of the 2025/2026 school year, with 28 students in class V (15 male and 13 female students), as well as grade V teachers as the main informants.

The data source consists of primary data, namely the results of observations and interviews with teachers and students of grade V selected by purposive sampling, as well as learning activities during the research; and secondary data, in the form of learning tool documents (teaching modules, lesson plans), activity documentation, school data, and relevant scientific literature. Data collection techniques are carried out through semi-structured in-depth interviews with teachers and students, non-participatory observations of teacher and student activities during learning, as well as documentation studies of teaching modules, lesson plans, LKPD, activity photos, and field notes. The researcher acts as the main instrument (human instrument) which is assisted by interview guidelines, observation sheets, and documentation tools in the form of cameras and voice recording devices. The instruments are validated through consultation with the supervisor and adjusted to the formulation of the problem and the purpose of the research.

Data was analyzed using the interactive analysis model Miles, Huberman, and Saldaña (2020), which consisted of data reduction, data display, and conclusion drawing and verification. Data reduction was carried out by selecting and grouping data relevant to the focus of the research, the presentation of data was arranged in the form of a descriptive narrative description, while conclusions were drawn gradually and verified through triangulation techniques and source triangulation to ensure the validity of the data.

FINDINGS AND DISCUSSION

Findings

SDN Unyur has a school environment that supports environment-based learning, with a large enough yard for the implementation of Mini Garden Project activities. The results of initial observations and interviews show that before the research, science learning was still dominated by lecture methods and package books, so students were less active and less enthusiastic.

The implementation of learning takes place in three meetings following six stages of Project Based Learning syntax, namely: (1) determining basic questions, the teacher asks sparking questions related to plant needs and photosynthesis to build students' curiosity; (2) designing the project plan, students are divided into groups of 4-5 people to prepare activity plans and division of tasks; (3) compile a schedule, each group determines the order and time of the implementation of planting activities to reporting; (4) monitoring the implementation of the project, students plant and care for plants while the teacher guides and assesses students'

attitudes, knowledge, and skills; (5) testing the results, each group presents the results of observation of plant growth and relates it to the concept of photosynthesis; and (6) evaluating the experience, the teacher and the students reflect on the learning process and results obtained.

The results of the observation show that in all these stages students are actively involved, work together in groups, and show high enthusiasm, so that learning is no longer teacher-centered but student-centered learning.

Students' learning interests are analyzed based on five indicators, namely attention, interest, involvement, activeness, and enthusiasm, as summarized in table 1.

Table 1. Learning Interest of Grade V Students of SDN Unyur in Science Learning

Indicator	Description of Findings
Caution	Students pay attention to the teacher's explanation and focus on the stages of the Mini Garden Project activities from the beginning of learning.
Keterarikan	Students are interested in the tools and materials used and actively ask questions about how to plant and care for plants.
Engagement	All students are involved in group activities, ranging from filling the soil, planting seeds, to watering plants.
Activeness	Students actively ask questions to teachers, discuss with group friends, and convey the results of observations during presentations.
Enthusiasm	Students were excited to participate in the activity until the end of the lesson, even asking for permission to continue caring for the plants.

Source: results of observations and researcher interviews (2026)

In addition, this study found several supporting factors, namely the full support of the principal and class teachers, the availability of the school yard as a Mini Garden location, high student enthusiasm, ease of obtaining tools and materials, and cooperation between group members that went well. The inhibiting factors found included limited learning time, some students who still needed guidance when planting, weather conditions that were not always supportive, and differences in plant growth that required additional care. These obstacles can be overcome through teacher assistance and adjustment of activity schedules.

Discussion

The results of the study show that the implementation of science learning through the use of the Mini Garden Project with the Project Based Learning model takes place according to the planned project-based learning stages, with teachers acting as facilitators and students being actively involved from planning to reflection. This condition strengthens the findings of Kurniawati (2021) and Fitriani (2022) that the use of Mini Garden as a learning medium helps students understand plant material more concretely through direct practice, and is in line with the findings of Ardiansyah et al. (2023) and Nency (2023) that the application of PjBL in science/science learning in elementary schools can be carried out in a structured manner and has a positive impact on student learning processes and outcomes. In contrast to these studies, this

study does not only use Mini Garden as a medium, but integrates it with the Project Based Learning model so that learning becomes more structured and oriented towards project completion.

The use of Mini Garden Project media has also been proven to be able to increase students' interest in learning, which can be seen from the higher attention, interest, involvement, activeness, and enthusiasm of students compared to conventional learning. These findings are in line with the research results of Harmawati et al. (2022) and Tussyadi et al. (2021) which show that the implementation of Project Based Learning is able to increase students' interest in learning because students are actively involved in project activities, reinforcing the research results of Rahmadani et al. (2023) who stated that student involvement in observation and practice activities directly increases students' attention, motivation, and enthusiasm in science learning, and is in line with the findings of Vazriyah et al. (2025) and Mambrasar et al. (2026) that the use of appropriate learning environments and learning media is able to foster interest in learning science for grade V elementary school students. These findings also strengthen the research results of Della and Dahlan (2024) which show the positive impact of PjBL on the science literacy of grade V elementary school students.

The success of the use of the Mini Garden Project in this study is not only determined by the learning media used, but also by the support of the school environment, teacher readiness, student participation, and effective management of learning time. Inhibiting factors in the form of time constraints and weather conditions show the need for more careful planning, especially in the management of the schedule of activities outside the classroom, so that the implementation of the project can take place optimally.

CONCLUSION

Based on the results of the research and discussion, it can be concluded that the implementation of science learning through the use of Mini Garden Project media with the Project Based Learning model in grade V students of SDN Unyur was carried out well according to the PjBL syntax, transforming learning that was originally teacher-centered into student-centered and providing a real and meaningful learning experience. The use of these media has also been proven to increase students' interest in learning, which can be seen from higher attention, interest, involvement, activeness, and enthusiasm during the learning process. The success of its implementation is supported by an adequate school environment, teacher readiness, student enthusiasm, and ease of obtaining tools and materials, although it is still faced with obstacles in the form of time constraints and weather conditions that can be overcome through teacher assistance and schedule adjustments.

This research has limitations because it is only carried out in one class in a relatively short time. Therefore, further research is recommended to develop the use of the Mini Garden Project on other science materials or different grade levels, with a longer duration, as well as examine its influence on other aspects such as learning outcomes, science process skills, critical thinking, and students' collaboration skills.

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