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The Effectiveness of Outdoor Learning-Based Teaching Methods in Enhancing the Understanding of Geographic Concepts

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ABSTRACT

This study aims to examine the effectiveness of the outdoor learning-based teaching method in improving the understanding of geographic concepts among eleventh-grade students at SMA Negeri 1 Dolok Pardamean, Simalungun Regency, North Sumatra. The study employed a quantitative approach with a quasi-experimental design using the nonequivalent control group design, involving two groups: the experimental group taught through the outdoor learning method and the control group taught through conventional methods. The research instruments consisted of written tests and observation sheets. Data were analyzed using descriptive statistics and a t-test to determine significant differences between groups. The findings revealed a significant improvement in students' understanding of geographic concepts when taught through the outdoor learning method. The average posttest score of the experimental group reached 82.70, higher than that of the control group, which was only 74.15. The t-test result showed a t-value of 4.52 with a significance level of $p < 0.001$, confirming a significant difference between the two groups. Observations also indicated that student engagement in the experimental group was higher (85%) compared to the control group (60%), suggesting that this method is effective in enhancing students' motivation and participation.

Keywords: *Outdoor Learning; Geography; Concept Understanding; Learning Motivation*

1. INTRODUCTION

Geography education plays a crucial role in shaping students' understanding of the environment and the natural phenomena around them (Larsen et al., 2022; Gregory & Lewin, 2023; Chang & Kidman, 2024). However, conventional teaching methods, which are predominantly carried out in the classroom, are often less effective in enhancing a deep understanding of geographic concepts (Lundin et al., 2018; Tammets et al., 2024). The limited direct interaction with study objects causes students to struggle in connecting

theory with real-world situations, ultimately hindering their ability to apply geographic concepts in everyday life (Lee et al., 2023; Asad et al., 2023; Marougkas et al., 2023).

A number of studies have demonstrated that learning methods based on direct experience, such as outdoor learning, can improve students' understanding of geographic material. For instance, research by Apriyanti et al. (2025) found that the implementation of outdoor study methods was effective in improving geography learning outcomes for high school students in Palembang, particularly for those with extroverted personality types. In addition, research by Susilawati and Sochiba (2024) showed that field studies in mangrove areas could enhance geography learning outcomes among high school students. Furthermore, Brookfield (2022) revealed that outdoor study methods are effective in developing students' spatial intelligence in geography education. Another study by Van Kraalingen (2023), through a systematic review, concluded that outdoor study strategies can increase activeness, enthusiasm, motivation, responsibility, and students' understanding in geography learning. Setiawati et al. (2023) also found that the application of the Outdoor Learning Process model was effective in improving cooperation, learning motivation, and social studies learning outcomes in elementary school students. Research by Syawaludin et al. (2022) compared outdoor study methods with conventional methods using PowerPoint media, finding that outdoor study was more effective in geography learning. Lastly, Wulandari et al. (2018) showed that the use of environment-based media in geography education could enhance students' learning outcomes.

The purpose of this study is to explore the effectiveness of outdoor learning-based teaching methods in improving the understanding of geographic concepts among secondary school students. This research analyzes the extent to which the method can help students connect geographic theory with real phenomena in the field, as well as identify factors that influence the success of its implementation. Thus, this study is expected to contribute to the development of more effective and applicable geography teaching strategies.

Based on the literature review and preliminary observations, the hypothesis proposed in this study is that outdoor learning-based teaching methods are more effective in improving the understanding of geographic concepts compared to conventional classroom teaching methods. It is expected that through direct interaction with the environment and real geographic phenomena, students will more easily understand and internalize the concepts taught, thereby improving the overall quality of geography learning.

2. RESEARCH METHODE

This study aims to examine the effectiveness of outdoor learning-based teaching methods in improving the understanding of geographic concepts among eleventh-grade students at SMA Negeri 1 Dolok Pardamean, located on Jalan Tigaras Sipintuangin, Parik Sabungan Village, Dolok Pardamean District, Simalungun Regency, North Sumatra. The subjects of this study were eleventh-grade students taking geography as a subject, while the object of the research was the effectiveness of the outdoor learning method in enhancing

the understanding of geographic concepts. This study employed a quantitative approach with a quasi-experimental method and a nonequivalent control group design, comparing an experimental group that received instruction using the outdoor learning method and a control group that received conventional classroom-based instruction (Azizi et al., 2025).

The research was carried out through several stages, including preparation—covering the selection of materials and outdoor learning locations, implementation by dividing students into two groups, and evaluation through tests to measure students' understanding of geographic concepts after the treatment (Azizah & Hardi, 2024). The research instruments used consisted of written tests to measure students' understanding of concepts before and after the treatment, as well as observation sheets to assess student engagement during learning activities (Apriyanti et al., 2023). The data obtained were analyzed using descriptive and inferential statistics, with the t-test as the primary method to determine significant differences between the learning outcomes of the experimental and control groups (Susilawati & Sochiba, 2022). The findings of this study are expected to contribute to the development of more effective, applicable, and experience-based geography teaching strategies.

3. RESULT AND ANALYSIS

Results of the Geographic Concept Understanding Test

This study measured the effectiveness of the outdoor learning method through test instruments administered to two groups, namely the experimental group that used the outdoor learning method and the control group that used conventional methods. Both groups took a pretest before the treatment to determine the equivalence of their initial abilities, as well as a posttest after the treatment to assess the improvement in their understanding of geographic concepts.

Table 1. T-test Results of Pretest and Posttest of Understanding Geography Concepts

Group	Pretest	Posttest	Difference	t-count	Sig. (p)	Description
Eksperimen (*Outdoor Learning*)	63,25	82,70	+19,45	4,52	< 0,001	Significant
Kontrol (Konvensional)	62,80	74,15	+11,35	-	-	Increased

Based on the table above, the average pretest scores of the experimental group (63.25) and the control group (62.80) indicate relatively balanced initial conditions. After the treatment, the experimental group showed a significant increase to 82.70, while the control group improved to 74.15. The t-test result showed a t-value of 4.52 with a significance level of $p < 0.001$, indicating a significant difference between the two groups

in the posttest stage. Thus, the outdoor learning method proved to be more effective than the conventional method in enhancing students' understanding of geographic concepts.

Observation of Student Learning Activities

In addition to the test results, observational data revealed notable differences in students' learning activities. In the experimental group, most students were actively engaged in observing geographic phenomena, taking notes, participating in discussions, and directly asking questions to the teacher in the field. The level of student engagement reached 85%, whereas in the control group it was only around 60%. Students who participated in outdoor learning-based instruction also demonstrated greater curiosity, particularly when connecting theoretical concepts with real-world situations.

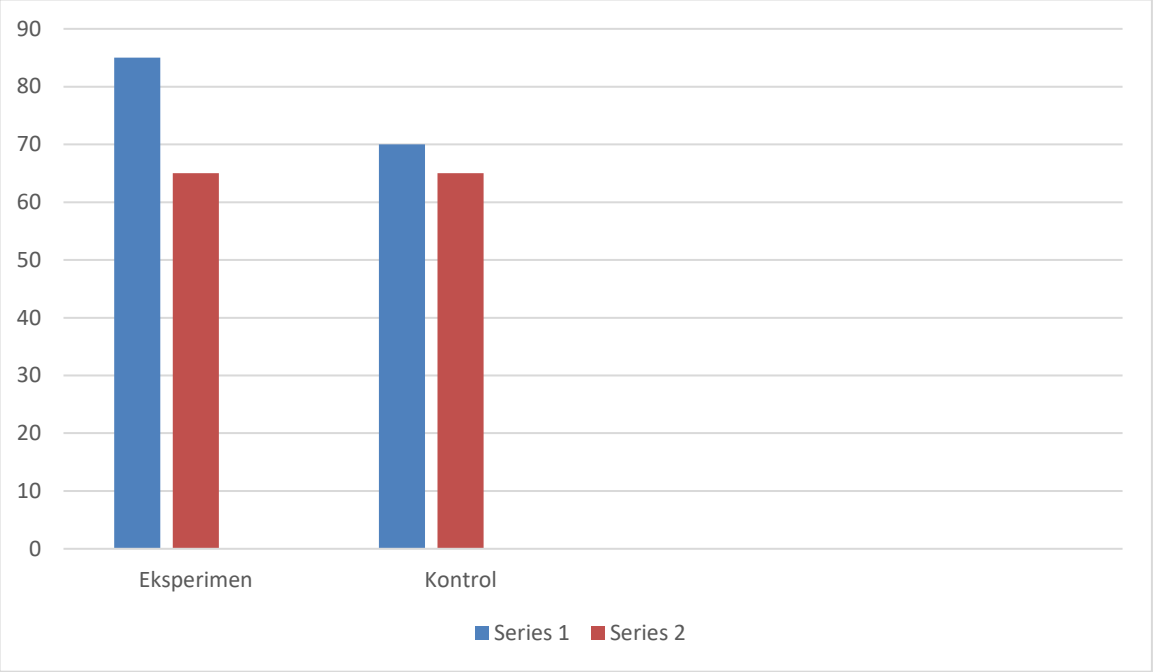
Increased Motivation and Participation

Students' learning motivation also increased in the experimental group. Based on the observation sheets, students appeared more enthusiastic in participating in the lessons, demonstrated initiative in seeking additional information, and were confident in expressing their opinions. This contrasts with the control group, which tended to be more passive and relied heavily on waiting for the teacher's instructions. These results indicate that outdoor learning not only impacts conceptual understanding but also affects the affective aspects, namely students' motivation and interest in learning.

The Effectiveness of Outdoor Learning on Conceptual Understanding

The findings of this study confirm the hypothesis that the outdoor learning method is more effective in improving the understanding of geographic concepts compared to conventional methods. Direct interaction with real objects enables students to develop observation, analysis, and knowledge synthesis skills, which are difficult to achieve solely through classroom based learning (Damaševičius & Sidekerskienė, 2024). The results can be seen in Figure 1.

Figure 1. Comparison of mean pretest and post test scores of experimental and control groups



The significant increase in the experimental group is in line with the research results of Apriyanti et al. (2025), who found that outdoor learning has a positive impact especially on high school students in understanding spatial concepts. This shows that empirical experience has an important role in the internalization process of geography concepts.

Field Activities as a Constructivist Strategy

The observations revealed that students were more active when directly interacting with their environment. This activity reinforces constructivist theory, in which knowledge is not merely transferred from teacher to student but is constructed through real-life experiences. By directly observing settlement patterns, landforms, and environmental phenomena, students are able to connect geographic theory with empirical reality. This is in line with Susilawati & Sochiba (2024), who emphasized the importance of field studies in enhancing students' analytical abilities toward geographic phenomena.

Increased Learning Motivation

The higher learning motivation observed in the experimental group demonstrates that outdoor learning provides a more engaging and challenging learning experience. Setiawati et al. (2023) also showed that outdoor learning is capable of enhancing cooperation, motivation, and student learning outcomes. Thus, this method not only provides conceptual understanding but also fosters a positive attitude toward the learning process.

Weaknesses of Conventional Methods

Although the control group also experienced an improvement in learning outcomes, the increase was smaller compared to the experimental group. This indicates the limitations of conventional methods, which tend to be teacher-centered and provide less contextual learning experiences. Research by Syawaludin et al. (2022) confirmed that conventional methods are less effective than outdoor learning in geography education.

Theoretical and Practical Implications

Theoretically, the findings of this study strengthen the foundation of experiential learning theory, which emphasizes the importance of direct experience in building knowledge. Practically, the results provide recommendations for geography teachers to integrate outdoor learning into the curriculum. The implication is that schools need to support field activities as part of geography education. With adequate facilities and infrastructure, this method can improve the quality of learning while also addressing the challenges of the Merdeka Curriculum, which emphasizes project-based and contextual learning.

4. CONCLUSION

This study aims to examine the effectiveness of outdoor learning-based teaching methods in improving the understanding of geographic concepts among eleventh-grade students at SMA Negeri 1 Dolok Pardamean. Based on the data analysis, several conclusions can be drawn as follows:

1) The outdoor learning method proved effective in enhancing the understanding of geographic concepts. This is evidenced by the significant increase in the average posttest score of the experimental group (82.70), which was higher than that of the control group (74.15). The t-test result showed a t-value of 4.52 with a significance level of $p < 0.001$, indicating a significant difference between the two groups.
2) Direct interaction with the real environment provided a more contextual learning experience. Students in the experimental group were better able to connect theory with geographic phenomena in the field, thereby strengthening their knowledge construction.
3) The outdoor learning method also increased students' motivation and participation. Observations indicated that more than 85% of students in the experimental group were actively engaged, far higher compared to 60% in the control group. This demonstrates that outdoor learning impacts not only the cognitive aspect but also the affective aspect, namely students' interest and learning motivation.
4) Theoretically, the findings of this study reinforce the experiential learning approach and constructivist theory, which emphasize the importance of real-life

experiences in building knowledge. Practically, this study provides recommendations for teachers to integrate outdoor learning into the geography curriculum as an applicable learning strategy aligned with the demands of the Merdeka Curriculum.

Thus, this study affirms that outdoor learning can serve as an innovative alternative to improve the quality of geography education in secondary schools.

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