



The Effect of Outdoor Education Activities at SMK Negeri 2 Semarang on Physical Education Instruction to Enhance Student Motivation

Janu Setyawan ^{1*}, Ibnu Fatkhu Royana ², Muh Isna Nurdin Wibisana ³

^{1,2,3} Pendidikan Jasmani Kesehatan dan Rekreasi, Universitas PGRI Semarang, Indonesia

*Corresponding author's email: janusetyawan58@gmail.com

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ABSTRACT

This study aims to determine the effect of outdoor education activities on students learning motivation in Physical Education, Sports, and Health (PJOK) classes at SMK Negeri 2 Semarang. The background of this study is based on the low level of students learning motivation, as evidenced by a lack of active participation, enthusiasm, and engagement in PJOK classes, which are still dominated by conventional methods. This study employed a quantitative method with a quasi-experimental design, specifically a pretest-posttest control group design. The sample consisted of two groups: an experimental group that received outdoor education and a control group that used conventional teaching methods. Data were collected using a learning motivation questionnaire, and statistical analysis was conducted using a paired-sample t-test and a test for differences between groups. The results of the study indicate that there was a significant increase in learning motivation in the experimental group, with a significance level of 0.004 ($p < 0.05$), whereas no significant increase was observed in the control group ($p > 0.05$). This suggests that outdoor education activities have a positive effect on students learning motivation. Outdoor-based learning creates a more engaging and challenging learning environment and increases students active participation. Thus, it can be concluded that outdoor education is an effective alternative learning strategy for enhancing students motivation in physical education classes. It is hoped that this study will serve as a reference for teachers in developing innovative and context-based teaching methods.

Introduction

Education plays a vital role in developing an individual's potential cognitively, affectively, and psychomotorically. Through education, students are expected to develop the skills, character, and critical thinking abilities that support success in life. In the context of physical education, sports, and health, learning aims not only to improve physical fitness but also to shape students attitudes, values, and motivation to learn (Kapti & Winarno, 2022). Motivation plays a crucial role in the learning process of Physical Education, Sports, and Health because it is the primary factor that drives students to actively participate in learning activities (Hrušová, Kokštejn, et al., 2024). Motivation can be defined as an internal or

external drive that influences a person's behavior in achieving specific goals (Hrušová, Kokštejn, et al., 2024). In P.E., sports, and health education, motivation is essential for students to have the drive, interest, and enthusiasm to participate in the physical activities provided (Sozonova et al., 2024). Intrinsic motivation arises from within the student, such as a sense of enjoyment in sports activities, while extrinsic motivation stems from external factors such as rewards, teacher support, and a pleasant learning environment (Sozonova et al., 2024)

Learning motivation is one of the key factors determining students success in the learning process. The effect of motivation on student learning outcomes in physical education is highly significant because motivation is directly linked to student engagement throughout the learning process (Hrušová, Kokštejn, et al., 2024). Students with high motivation tend to be more active, enthusiastic, and persistent in their studies (Sozonova et al., 2024). Learning motivation can also improve students motor skills, concentration, and ability to actively participate in physical education classes (Murdiono et al., 2022). Additionally, highly motivated students tend to collaborate more easily with peers and follow the teacher's instructions more effectively (Waite, 2020). Indicators of motivation can be seen in students participation, attention, enthusiasm, and consistency in participating in physical education classes (Hrušová, Kokštejn, et al., 2024). Conversely, low learning motivation can lead to reduced student participation and poor academic performance. This aligns with the view that motivation is a determining factor in students success in the learning process (Karyawati, 2022).

However, based on observations at SMK Negeri 2 Semarang, particularly among 11th grade students in the marketing vocational program, it was found that students motivation in Physical Education and Health classes remains relatively low. This is evidenced by a lack of enthusiasm among students, low levels of active participation, and a tendency for students to view PJOK classes as monotonous and unchallenging. Self regulation strategies in learning are a key aspect closely linked to student motivation in physical education. Self regulation helps students plan, control, and evaluate their learning process independently so that learning objectives can be effectively achieved. Students with high intrinsic motivation are generally better able to manage their learning process because they have an internal drive to achieve learning success (Hrušová, Kokštejn, et al., 2024). This ability helps students remain focused, disciplined, and responsible while participating in Physical Education and Health learning activities. In modern education, teachers are required to use more engaging teaching methods to prevent students from becoming bored during the learning process (Waite, 2020). Furthermore, instruction remains dominated by conventional methods and has not yet utilized the external environment as a learning resource.

This issue indicates that the teaching methods currently in use have not been able to create engaging and meaningful learning experiences for students. In fact, effective learning should actively engage students and provide hands on experiences relevant to real life. One method that can be used is outdoor education, as it provides students with a more realistic and meaningful hands on learning experience (Hu & Mou, 2025). Through outdoor learning experiences, students can enjoy a more enjoyable learning environment, which significantly increases their motivation and engagement in the learning process.

Outdoor education is a learning approach that uses the outdoor environment as a learning medium to provide students with hands on experiences. According to (Khalista Savitri et al., n.d.) this approach is based on the concept of experiential learning, which emphasizes direct experience and reflection as the primary sources of learning. Outdoor education activities in Physical Education and Health can be conducted through group games, environmental exploration activities, educational physical challenges, and teamwork activities (Frühauf et al., 2023). This type of experience-based learning makes it easier for students to understand the material because they are directly involved in the learning activities. A fun and challenging learning environment can spark curiosity and increase students enthusiasm for participating in Physical Education lessons (Sozonova et al., 2024).

In the context of physical education, outdoor education has great potential to boost students motivation to learn. This is because outdoor activities create a more enjoyable and challenging learning environment and encourage social interaction among students (Hu & Mou, 2025). In addition, outdoor education can also enhance intrinsic motivation through engaging learning experiences, as well as extrinsic motivation through feedback, rewards, and social interaction. (Miftahul et al., 2025). For this reason, outdoor education is considered an effective alternative learning method for boosting students motivation to learn.

Several previous studies have shown that outdoor education can have a positive impact on students psychological well-being, such as self confidence and engagement in learning (Suhendra, n.d.). However, most of these studies have focused primarily on learning outcomes or physical skills and have been conducted at the elementary and middle school levels. Furthermore, the research approaches used are generally descriptive and have not yet made extensive use of robust experimental designs.

Thus, there is a research gap that requires further investigation, namely:

1. The lack of research specifically examining students motivation to learn in physical education classes
2. The limited scope of research in the context of vocational high schools (SMK)
3. The limited use of quasi experimental methods in testing the effectiveness of outdoor education

Given this gap, this study aims to determine the effect of outdoor education activities on students motivation to learn in physical education classes at SMK Negeri 2 Semarang.

This study is expected to make contributions both theoretically and practically. Theoretically, this study can enrich the scientific literature on the application of outdoor education in physical education. Practically, the results of this study are expected to serve as a reference for teachers in developing more innovative, engaging, and effective teaching methods to enhance students motivation to learn.

Based on the above discussion, research on the impact of outdoor education activities on students motivation to learn in physical education classes is important to conduct in order to address the issue of low student motivation and improve the quality of learning in schools.

Research Methods

This study employs a quantitative approach using a quasi experimental research design. The research design used is a pretest-posttest control group design, involving two groups: an experimental group and a control group. The experimental group was exposed to outdoor education activities, while the control group used conventional teaching methods.

The research design can be described as follows:

Experimental group: $O_1 - X - O_2$

Control group: $O_1 - - O_2$

Description:

O_1 = pretest (initial test of learning motivation)

O_2 = posttest (final test of learning motivation)

X = intervention (outdoor education)

The study was conducted at SMK Negeri 2 Semarang among 11th grade students in the marketing program. The population for this study consisted of all 11th grade students, while the sample was selected using purposive sampling, which involves selecting participants based on specific criteria aligned with the study's objectives. The sample comprised two classes, designated as the experimental group and the control group, respectively.

The research instrument used was a student learning motivation questionnaire designed based on indicators of intrinsic and extrinsic motivation. The questionnaire used a Likert scale with multiple choice responses to measure students motivation levels before and after the intervention. Prior to use, the instrument was tested for validity and reliability to ensure its suitability as a research measurement tool.

Data collection was conducted by administering pretests and posttests to both groups. The pretest was administered to determine the initial state of students learning motivation, while the posttest was administered after the intervention to identify any changes that occurred.

Data analysis was performed using statistical tests, namely normality and homogeneity tests as prerequisites for analysis, followed by a paired sample t test to determine differences before and after the intervention within each group, as well as a between groups comparison test to assess the effect of outdoor education on students learning motivation. Data processing was conducted using statistical software (*SPSS*).

Findings

Based on the results of the data analysis, it was found that in the experimental group, there was an increase in the average student learning motivation from 110.370 (pretest) to 118.703 (posttest). The results of the paired sample t test showed a significance value of 0.004 ($p < 0.05$), indicating a significant increase following the implementation of outdoor education activities.

These results indicate that outdoor education based learning can significantly increase students motivation to learn. Learning that involves outdoor activities allows students to have a more active and participatory learning experience compared to classroom-based learning (Simón-Chico et al., 2023). Activities conducted directly in an open environment can foster students curiosity and improve their focus during Physical Education lessons (Van Doren et al., 2025). Additionally, a learning environment that differs from conventional classroom settings makes it easier for students to understand the material because they are directly engaged in the learning process (Mann et al., 2023). Physical activity combined with group collaboration also helps students become more confident and willing to participate in learning activities (Hills et al., 2024). These findings are supported by research indicating that outdoor experiential learning can enhance student engagement, motivation, and well-being in physical education (Simón-Chico et al., 2023). This increase occurs because students are directly involved in real-world, contextual learning activities. This aligns with the theory of experiential learning, which states that direct experience is the primary source of effective learning in enhancing student engagement and motivation (Khalista Savitri et al., n.d.).

The concept of experiential learning places students at the center of the learning process through real-world experiences gained during activities (Mann et al., 2023). In physical education, this approach is highly relevant because students not only receive theory but also engage in hands-on practice through challenging and enjoyable physical activities (Schweder & Raufelder, 2024). Learning experiences gained firsthand tend to be easier for students to understand and remember compared to learning that is purely verbal (Liu et al., 2025). Additionally, students become more active in problem-solving, collaborating, and making decisions during the activities (Simón-Chico et al., 2023). These conditions indirectly enhance students sense of responsibility and engagement in the learning process (Zhu et al., 2023). In addition, outdoor activities provide a more enjoyable and less monotonous learning environment, thereby increasing students interest and enthusiasm. This reinforces the view that a varied learning environment can enhance students intrinsic motivation (Zulfriman et al., 2024).

A varied learning environment provides new stimuli that can reduce student boredom during physical education classes (Schweder & Raufelder, 2024). Variations in activities and the learning atmosphere make students more enthusiastic about participating in each stage of the learning process led by the teacher (Simón-Chico et al., 2023). Additionally, an outdoor environment provides more space for movement, allowing students to feel freer in expressing their abilities during activities (Mann et al., 2023). This situation helps increase students comfort and enjoyment of physical education lessons (Hrušová, Chaloupský, et al., 2024). As their enjoyment of learning increases, students intrinsic motivation also develops more optimally and sustainably (Zhu et al., 2023).

In the control group, the mean scores for learning motivation were 111.750 (pretest) and 113.464 (posttest). The results of the statistical test showed a significance value of 0.431 ($p > 0.05$), indicating that there was no significant increase.

This indicates that the conventional teaching methods currently in use have not been able to optimally enhance students motivation to learn. Monotonous instruction that fails to actively engage students tends to cause them to become bored quickly and lose motivation (Diba Ayshara & Kamil, 2024). Conventional teaching methods tend to be teacher-centered, resulting in limited student engagement in the learning process (Van Doren et al., 2025). This situation prevents students from gaining active and meaningful learning experiences (Liu et al., 2025). Furthermore, monotonous instruction can cause students to quickly become bored and lose interest in participating in physical education activities (Schweder & Raufelder, 2024). The lack of variety in activities also means that students do not face new challenges that can boost their enthusiasm for learning (Zhu et al., 2023). Therefore, more innovative and interactive teaching methods are needed so that students can be fully engaged during the learning process (Simón-Chico et al., 2023).

These findings are consistent with the theory that learning which does not provide direct experience and lacks interactivity will result in low student motivation.

Learning with minimal interaction results in students merely becoming passive recipients of information without the opportunity to actively explore their abilities (Liu et al., 2025). In Physical Education (PJOK) learning, students' physical and emotional engagement are critical factors influencing learning success (Song et al., 2024). When students lack opportunities to move, collaborate, and tackle challenges directly, their motivation to learn tends to decline (Zhu et al., 2023). Furthermore, a lack of social interaction in learning can also reduce students' self-confidence and enthusiasm during activities. Therefore, a more contextual and experience-based learning approach is essential for modern physical education (Mann et al., 2023).

When comparing the two groups, it is evident that the increase in learning motivation in the experimental group is significantly higher than in the control group. This indicates that outdoor education activities are more effective than conventional teaching methods.

The advantages of outdoor education lie in its ability to:

- 1) Enhance students active engagement
- 2) Provide hands-on learning experiences
- 3) Foster social interaction and cooperation
- 4) Creating a pleasant learning atmosphere

Outdoor education activities provide students with opportunities to learn through real-world experiences directly related to physical activity and daily life (Simón-Chico et al., 2023). Through group activities, students learn to build communication and cooperation skills, as well as the ability to solve problems collaboratively (Schweder & Raufelder, 2024). These activities help improve social skills while strengthening relationships among students in the learning process (Zhu et al., 2023). Additionally, a fun learning environment makes students more comfortable participating actively without feeling pressured (Hrušová, Chaloupský, et al., 2024). Learning that involves challenges and hands-on experiences can also boost students' self-confidence and courage in making decisions during the activities (Mann et al., 2023).

Theoretically, this can be explained through the concepts of intrinsic and extrinsic motivation. Outdoor activities foster a sense of enjoyment and interest in learning (intrinsic), while simultaneously strengthening motivation through social interaction and environmental support (extrinsic). Intrinsic motivation develops when students feel that learning activities provide them with enjoyable and meaningful experiences. In outdoor education activities, students tend to feel more free, active, and challenged, which fosters an inner drive to engage fully in the learning process. Meanwhile, extrinsic motivation is derived from peer support, teacher recognition, and a positive learning atmosphere throughout the activities. The combination of these two types of motivation makes students more consistent in participating in physical education (Van Doren et al., 2025). Thus, outdoor education not only boosts temporary enthusiasm for learning but also helps build more sustainable learning motivation.

The results of this study indicate that the use of appropriate teaching methods has a significant impact on students' motivation to learn. In physical education, instruction should not only focus on physical activities but should also create engaging and meaningful learning experiences (Angga & Sari, 2025). Physical Education (PJOK) instruction is fundamentally aimed at developing students' physical, mental, social, and emotional abilities in a balanced manner (Song et al., 2024). Therefore, the learning process must be designed to provide a learning experience that is both enjoyable and educational. Outdoor education is an effective alternative because it integrates physical activity with real-world, experience-based learning (Simón-Chico et al., 2023). In addition to improving physical fitness, outdoor activities also help students develop communication, leadership, and teamwork skills (Mann et al., 2023). This indicates that innovative Physical Education and Health (PEH) instruction can have a positive impact on students' overall development (Schweder & Raufelder, 2024).

The implementation of outdoor education has proven to be an effective solution for addressing low student motivation. Learning that takes place outside the classroom provides variety and new experiences for students, making them more engaged and active in the learning process (Afifah Purwakusumaningrum et al., 2025). Variety in learning is a key factor in maintaining students' concentration and enthusiasm during physical education classes. When students experience learning activities that differ from the norm, they tend to show greater curiosity and enthusiasm. Out-of-class activities also provide students with the opportunity to explore their surroundings as a real and contextual learning resource. Additionally, outdoor activities can help reduce academic stress, allowing students to feel more relaxed and comfortable during the learning process. These conditions positively influence increased active participation and student engagement in every learning activity.

The findings of this study also address previously identified research gaps. This study not only examines learning outcomes or physical skills but specifically highlights students' motivation to learn in physical education classes. In addition, this study was conducted in the context of a vocational high school (SMK) using a quasi-experimental design, thereby providing stronger empirical evidence than previous studies, which were generally descriptive in nature.

The Sub Findings

1. Results of the Descriptive Analysis of Learning Motivation

The results of the descriptive analysis indicate a difference in the mean scores for student learning motivation between the experimental group and the control group, both before and after the intervention. In the experimental group, the mean score for student learning motivation before the intervention (pretest) was 110.370, whereas after the intervention which consisted of outdoor education activities (posttest) it increased to 118.703.

Meanwhile, in the control group, the pretest average score was 111.750 and increased to 113.464 on the posttest. Although there was an increase, the difference was relatively small compared to the experimental group.

Table 1. Descriptive Statistics for Control Variables

Group	Min	Max	Mean	Deviation
Pretest	90	137	111.750	9.788
Posttest	90	137	113.464	10.999

Table 2. Descriptive Statistics for Experimental Variables

Group	Min	Max	Mean	Deviation
Pretest	84	141	110.370	11.459
Posttest	102	149	118.703	9.698

2. Results of the Normality Test

The results of the normality test indicate that the pretest and posttest data for both groups are normally distributed. This is evidenced by p values greater than 0.05, indicating that the data meet the assumption of normality.

Table 3. Control Normality Test

Group	Statistic	df	Sig.
Pretest	0.964	28	0.433
Posttest	0.971	28	0.599

Table 4. Experimental Normality Test

Group	Statistic	df	Sig.
Pretest	0.965	28	0.487
Posttest	0.935	28	0.091

3. Results of the Paired Sample t Test for the Experimental Group

The results of the paired-sample t test for the experimental group showed a significance value of 0.004 ($p < 0.05$). This indicates that there is a significant difference between the pretest and posttest scores in the experimental group.

Thus, it can be concluded that outdoor education activities have a significant effect on improving students learning motivation.

Table 5. Paired t-Test for the Experimental Group

Group	Value (Mean ± SD)	Confidence Interval 95%		P - Value
		Lower Bound	Upper Limit	
Pretest	110.370 ± 11.459	105.837	114.903	0.004
Posttest	118.703 ± 9.698	114.867	122.540	

4. Results of the Paired Sample t-Test for the Control Group

The results of the paired-sample t-test for the control group showed a p-value of 0.431 ($p > 0.05$). This indicates that there was no significant difference between the pretest and posttest scores.

Thus, teaching Physical Education using conventional methods did not have a significant effect on students motivation to learn.

Table 6. Paired t-Test for the Control Group

Group	Value (Mean ± SD)	Confidence Interval 95%		P - Value
		Lower Bound	Upper Limit	
Pretest	111.750 ± 9.788	107.954	115.545	0.431
Posttest	113.464 ± 10.999	109.199	117.729	

5. Results of the Comparison of Improvements Across Groups

Based on a comparison of the results between the two groups, it was found that the increase in learning motivation was higher in the experimental group than in the control group. This is evident from the larger difference in average scores in the experimental group after the intervention was administered.

Discussion

The results of the study indicate that outdoor education activities have a significant impact on increasing students motivation to learn in Physical Education classes at SMK Negeri 2 Semarang. This is evidenced by a significant increase in the average learning motivation score in the experimental group compared to the control group.

1. The Effect of Outdoor Education on Learning Motivation

The significant increase in learning motivation among the experimental group indicates that the implementation of outdoor education can create more effective learning

compared to conventional methods. Students involved in outdoor learning activities demonstrated higher levels of enthusiasm, participation, and engagement (Putri et al., 2016).

Theoretically, these findings can be explained through the concept of experiential learning, which states that direct experience is the primary source in the learning process. According to (Khalista Savitri et al., n.d.), learning that involves real-world experiences is easier for students to understand and remember, and can significantly enhance learning motivation.

Additionally, outdoor education-based learning offers a learning environment that differs from classroom-based learning. The more open and dynamic outdoor environment can reduce student boredom and increase interest in learning (Dani Wiradhika Putra et al., 2024). This reinforces the view that a pleasant and varied learning atmosphere is a key factor in enhancing students intrinsic motivation.

2. Limitations of Conventional Methods in Boosting Motivation

The lack of significant improvement in the control group indicates that conventional teaching methods have not been able to optimally enhance students motivation to learn. One-way instruction that fails to actively engage students tends to make them passive and disinterested (Dahlan et al., 2025).

This finding aligns with the theory that low student engagement in the learning process can directly impact low learning motivation. Learning that does not provide hands on experiences and lacks interactivity tends to make students quickly feel bored.

Thus, a lack of variety in teaching methods is one of the factors contributing to low student learning motivation in Physical Education (PJOK) classes.

3. The Role of Intrinsic and Extrinsic Motivation in Outdoor Education

The increase in learning motivation among the experimental group can also be explained through the theory of intrinsic and extrinsic motivation. In outdoor education activities, students not only have an enjoyable learning experience but also receive social support from their peers and teachers.

Intrinsic motivation arises from within the student, such as a sense of joy, interest, and satisfaction in participating in learning activities. Meanwhile, extrinsic motivation stems from external factors, such as social interaction, rewards, and a supportive learning environment.

Outdoor education activities effectively combine both types of motivation. Challenging and enjoyable activities boost intrinsic motivation, while group collaboration and social interaction enhance students extrinsic motivation.

1. Implications for Physical Education

The findings of this study have important implications for the development of Physical Education (PJOK) instruction in schools. Teachers need to consider using more

innovative and varied teaching methods, one of which is through the implementation of outdoor education.

Learning conducted outside the classroom not only increases students physical activity but also enhances psychological aspects, such as learning motivation (Musto et al., 2025). This indicates that Physical Education and Health (PJOK) instruction should not only focus on physical aspects but also address students affective aspects.

Furthermore, utilizing the surrounding environment as a learning resource can serve as an effective alternative in creating more contextual and meaningful learning experiences.

2. Relevance to the Research Gap

The findings of this study both reinforce and address previously identified research gaps. Specifically, this study examines the impact of outdoor education on students learning motivation in physical education classes, a topic that has received limited attention in prior research.

Furthermore, this study was conducted in the context of a vocational high school (SMK) using a quasi-experimental design, thereby providing stronger empirical evidence compared to previous studies, which generally employed descriptive methods.

Thus, this study offers a new contribution to the development of outdoor education research, particularly in enhancing students learning motivation in physical education (PJOK) at the vocational high school level.

Conclusion

This study aims to determine the effect of outdoor education activities on students learning motivation in physical education classes. Based on the results, it can be concluded that the implementation of outdoor education significantly increases students learning motivation. Learning conducted through outdoor activities provides a more meaningful learning experience, encourages active participation, and fosters students interest and enthusiasm in the learning process.

These findings indicate that the use of varied and experience-based learning methods plays a crucial role in improving the quality of learning, particularly regarding learning motivation. Outdoor education serves not only as an alternative teaching method but also as an approach capable of creating a more interactive, enjoyable, and contextual learning environment.

Based on these findings, the implementation of outdoor education is recommended to be integrated into Physical Education (PJOK) instruction on an ongoing basis, taking into account activity planning, environmental conditions, and student characteristics. Teachers are encouraged to develop a variety of outdoor activities aligned with learning objectives to continuously enhance students learning motivation. Additionally, schools can support this by providing facilities and policies that enable the use of the environment as a learning resource.

Thus, outdoor education has the potential to become an effective learning strategy for enhancing student motivation and supporting the creation of more innovative and meaningful Physical Education (PJOK) learning.

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