The Influence of the Outdoor Learning Model on Students' Environmental Awareness in the Environmental Pollution Topic Among Grade X Students

Ilma Nafi'atus Zakiya[1], Nizar Azizatun Nikmah[2]
[1,2]UIN Sayyid Ali Rahmatullah Tulungagung, Indonesia
E-mail: ilmazakiya338@gmail.com, nizar.azizatun@gmail.com

Article Info
Article History
Received: 2025-11-05
Revised: 2025-12-19
Published: 2026-01-16

Keywords:
Outdoor Learning;
Environmental Care Attitude;
Environmental Pollution.

Abstract
This research was motivated by the low level of environmental care attitudes among Grade X students of MAN 2 Blitar in the topic of environmental pollution. This condition was caused by the use of conventional learning models that are one-directional, less varied, and have not utilized the surrounding environment as a learning resource. As a result, students tend to be less sensitive to environmental issues and are not accustomed to developing genuine concern in their daily lives. To address this issue, an innovative and contextual learning model is needed, one of which is the Outdoor Learning model. This model integrates the learning process with direct exploration of the surrounding environment, thereby expected to foster a more meaningful sense of environmental care. The aim of this study was to determine the effect of the Outdoor Learning model on students' environmental care attitudes in the environmental pollution topic. This research employed a quantitative approach using a Quasi-Experimental Design with a Non-Equivalent Control Group Design type. The sampling technique used was purposive sampling, with class X-D as the experimental group and class X-J as the control group, each consisting of 35 students. The research instrument was a questionnaire measuring environmental care attitudes. The results of the analysis showed that the Outdoor Learning model had a significant effect on students' environmental care attitudes (Sig. 0.000 < 0.05). Therefore, this learning model is effective for use in Biology learning, particularly in the topic of environmental pollution, to foster and enhance students' environmental care attitudes.

Artikel Info
Sejarah Artikel
Diterima: 2025-11-05
Direvisi: 2025-12-19
Dipublikasi: 2026-01-16

Kata kunci:
Pembelajaran di Luar Ruangan;
Sikap Peduli Lingkungan;
Pencemaran Lingkungan.

Abstrak
Penelitian ini dimotivasi oleh rendahnya tingkat sikap peduli lingkungan di kalangan siswa kelas X MAN 2 Blitar pada topik pencemaran lingkungan. Kondisi ini disebabkan oleh penggunaan model pembelajaran konvensional yang searah, kurang bervariasi, dan belum memanfaatkan lingkungan sekitar sebagai sumber belajar. Akibatnya, siswa cenderung kurang peka terhadap isu lingkungan dan tidak terbiasa mengembangkan kepedulian yang tulus dalam kehidupan sehari-hari. Untuk mengatasi masalah ini, dibutuhkan model pembelajaran yang inovatif dan kontekstual, salah satunya adalah model Pembelajaran Luar Ruangan (Outdoor Learning). Model ini mengintegrasikan proses pembelajaran dengan eksplorasi langsung lingkungan sekitar, sehingga diharapkan dapat menumbuhkan rasa kepedulian lingkungan yang lebih bermakna. Tujuan penelitian ini adalah untuk mengetahui pengaruh model Pembelajaran Luar Ruangan terhadap sikap peduli lingkungan siswa pada topik pencemaran lingkungan. Penelitian ini menggunakan pendekatan kuantitatif dengan menggunakan Desain Kuasi-Eksperimental dengan tipe Desain Kelompok Kontrol Non-Ekuivalen. Teknik pengambilan sampel yang digunakan adalah purposive sampling, dengan kelas X-D sebagai kelompok eksperimen dan kelas X-J sebagai kelompok kontrol, masing-masing terdiri dari 35 siswa. Instrumen penelitian berupa kuesioner yang mengukur sikap peduli lingkungan. Hasil analisis menunjukkan bahwa model Pembelajaran di Luar Ruangan memiliki pengaruh signifikan terhadap sikap kepedulian lingkungan siswa (Sig. 0,000 < 0,05). Oleh karena itu, model pembelajaran ini efektif digunakan dalam pembelajaran Biologi, khususnya pada topik pencemaran lingkungan, untuk menumbuhkan dan meningkatkan sikap kepedulian lingkungan siswa.

I. INTRODUCTION

Education is a conscious and systematic effort designed to help students develop their full potential comprehensively, encompassing the domains of knowledge, attitudes, and skills (Andryannisa et al., 2023). The main goal of education is not merely to produce individuals who excel academically, but also to cultivate people with strong character, high social awareness, and a sense of responsibility toward their surrounding environment (Amarullah, 2022). In line with the rapid development of the

times and increasingly complex global challenges, the Indonesian education system continues to undergo reforms and adjustments to meet contemporary demands and to prepare a generation capable of adapting and competing in various aspects of life. One concrete form of this educational reform is the implementation of a curriculum that emphasizes student-centered learning, flexibility, and real-life experience-based approaches. This curriculum is designed to address modern challenges by providing students with opportunities to develop their potential holistically and contextually. Therefore, it is essential to investigate how students adapt to this curriculum change, considering that every educational innovation often presents challenges in its implementation. Although the *Merdeka Curriculum* is expected to bring positive change to education, studies examining its impact on students—particularly regarding character formation and 21st-century skills—are still limited (Patimah, 2025).

The 21st-century learning era requires students to master critical, creative, collaborative, and communicative thinking skills (commonly known as the 4Cs) in order to face global challenges. In the context of Biology learning, these skills can be developed through active and contextual learning approaches, one of which involves utilizing the environment as a learning resource (Junedi et al., 2020). Science learning, particularly Biology, is therefore expected to connect theoretical concepts with real-life situations so that students can construct understanding through direct experiences in their surroundings (Harahap et al., 2022).

One alternative learning approach believed to address the challenges of 21st-century education while bridging students' needs for active, contextual, and meaningful learning is the Outdoor Learning model. This approach emphasizes learning activities conducted outside the classroom, involving direct interaction between students and their environment, which helps foster a sense of care for nature (Suherdiyanto, 2014). The model encourages students to engage directly with their surroundings through exploratory outdoor activities. Such direct interaction enables students to understand the impact of human activities on nature. The Outdoor Learning model consists of several stages designed to facilitate hands-on learning experiences beyond the classroom. The first stage is *preparation or orientation*, during which the teacher explains the learning objectives, materials to be covered, and safety procedures for outdoor activities. At this stage, the teacher also divides students into groups, explains each member's tasks, and ensures that all necessary tools and materials are ready. This stage is crucial for building students' physical and mental readiness to ensure that activities run smoothly. The second stage is the *core activity* or *implementation*, where students engage directly with the environment through activities such as observation, experimentation, interviews, or exploration related to the topic being studied. The teacher acts as a facilitator, guiding students to discover concepts through real experiences, providing stimulating questions, and helping them connect field findings with previously learned theories. Through these activities, students are expected to learn actively, critically, and collaboratively. The third stage involves *reflection and discussion*, where students and the teacher return to the classroom or discussion area to review and analyze field findings. Students present their observations and draw conclusions together. The teacher then clarifies and reinforces key concepts that emerged during the activity, ensuring that field experiences are logically connected to theoretical knowledge. The final stage is *evaluation and follow-up*. Here, the teacher assesses both the learning process and outcomes, through reports, presentations, or individual reflections. The evaluation not only measures cognitive knowledge but also assesses students' skills and attitudes during the activities. The teacher then provides feedback and connects the learning outcomes with future lessons. Thus, the syntax of the Outdoor Learning model forms a holistic learning flow—starting from planning, direct experience, reflection, to evaluation—aimed at developing conceptual understanding and thinking skills through authentic environmental experiences.

Awareness of the importance of preserving the environment has become increasingly significant amid the growing environmental degradation caused by human activities. Education plays a crucial role in instilling environmental awareness and care, especially through biology lessons that cover topics such as environmental pollution. Within the learning process, it is essential for students not only to comprehend the material cognitively but also to develop attitudes that reflect responsibility toward environmental sustainability. Environmental care attitude refers to an individual's tendency to understand, feel, and act in efforts to preserve nature (Qodriyanti et al., 2022). Therefore, in biology learning—particularly on

the topic of environmental pollution—it is highly relevant that students are able to connect scientific concepts with real environmental issues that occur in their surroundings (Wandini et al., 2022).

The environment plays a vital role in supporting human life; thus, maintaining its sustainability is of utmost importance. However, current realities indicate that environmental quality continues to decline due to human actions such as pollution and uncontrolled exploitation of natural resources. When nature is utilized without considering ecological balance and carrying capacity, environmental damage becomes inevitable. Hence, environmental care attitudes cannot emerge spontaneously—they must be cultivated and habituated from an early age through various real-life activities. One of the most effective ways to foster environmental awareness is through education oriented toward nature conservation. In the context of social life, concern for the environment can be demonstrated through attitudes and actions that reflect care for nature, such as maintaining cleanliness, avoiding littering, and nurturing plants. If every individual possesses such attitudes, a clean, beautiful, and healthy environment can be created and sustained continuously (Nainggolan et al., 2023). However, observations conducted at MAN 2 Blitar revealed that Biology learning is still dominated by conventional, teacher-centered, one-way methods. Such learning approaches tend to neither actively engage students nor utilize the surrounding environment as a learning resource. As a result, many students appear passive, experience boredom during the learning process, and demonstrate a lack of environmental awareness.

These experiences strengthen conceptual understanding while fostering moral awareness and responsibility for environmental preservation. Consequently, students become more environmentally conscious as they directly experience real-world conditions. In addition to the issues identified in the field, similar problems were also found in previous studies. Research conducted by Rose et al. showed that the implementation of Project-Based Learning integrated with Outdoor Learning significantly improved students' environmental awareness. This was demonstrated by a gain score of 24.83 in the experimental class, while the control class experienced a decline with a gain score of -1, indicating that conventional learning failed to optimally enhance environmental awareness (Rose et al., 2023).

Another study by Rahmawati Laksita P. et al. found that the use of Outdoor Learning within the Discovery Learning model had a significant effect on students' learning outcomes. The average posttest score of the experimental class was 84.0, higher than the control class, which scored only 69.4. Furthermore, in the affective domain, the experimental class achieved an average score of 81.6, compared to 74.7 in the control class, indicating an improvement in environmental awareness through outdoor-based learning (Laksita et al., 2017). Meanwhile, a study by Agnes Berlian Tamba demonstrated that the Inquiry Learning model was also effective in improving environmental awareness, as shown by the experimental class's average questionnaire score of 4.28 (equivalent to 85.71%), which was higher than the control class's 4.22 (equivalent to 84.50%) (Tamba, 2024).

Although the effectiveness of the Outdoor Learning model has been widely studied, most previous research has focused primarily on cognitive learning outcomes or other skills. In contrast, in-depth investigations into how Outdoor Learning influences students' environmental awareness remain limited. Most studies have not thoroughly examined how outdoor-based learning activities can develop and strengthen students' environmental consciousness through direct interactions with nature. Such real experiences offer students greater opportunities to understand ecological issues contextually—especially on topics like environmental pollution, which are highly relevant to daily life and provide opportunities to directly experience and respond to environmental problems.

Moreover, research conducted in religious-based educational institutions such as *madrasahs*—particularly at the MAN level—remains scarce, especially studies integrating environmentally oriented learning models with character development and 21st-century competencies. Therefore, it is necessary to conduct research that not only evaluates the general effectiveness of Outdoor Learning but also explores its implementation in a collaborative context to achieve two key objectives simultaneously: enhancing students' environmental awareness and developing their holistic competencies.

This study aims to examine the influence of the Outdoor Learning model on the

environmental awareness of tenth-grade students in the topic of environmental pollution at MAN 2 Blitar. Specifically, it seeks to determine whether students' direct involvement in outdoor exploratory learning activities can enhance their ability to analyze environmental problems and foster awareness and concern for ecological issues around them.

Through this study, it is expected that findings will enrich references for the development of contextual and applicable Biology learning models, particularly in religious-based educational settings such as *madrasahs*. Additionally, the results are expected to provide insights for teachers in designing more innovative, enjoyable, and relevant learning strategies aligned with 21st-century needs, while promoting balanced development of cognitive and affective aspects. Thus, this study contributes not only to academic discourse but also to educational practice in real learning environments.

II. METHOD

This study employed a quantitative approach using a Quasi-Experimental Design with a Non-Equivalent Control Group Design (Sugiyono, 2015). The design involved two groups that were not randomly assigned: class X-D as the experimental group, which received treatment through a group-based Outdoor Learning model, and class X-J as the control group, which received conventional instruction. The research was conducted at MAN 2 Blitar.

The population of this study consisted of all tenth-grade students of MAN 2 Blitar in the 2024/2025 academic year. The sampling technique used was purposive sampling, with class X-D and class X-J selected as samples, each consisting of 35 students. The selection was based on considerations of relatively equivalent academic ability and the practicality of implementing outdoor learning activities. Data collection was carried out using a questionnaire instrument, namely an environmental awareness attitude questionnaire. The questionnaire was developed using a four-point Likert scale to measure students' levels of environmental concern.

The data analysis techniques used in this study included instrument testing (validity and reliability tests), assumption testing (normality and homogeneity tests), and hypothesis testing using the independent sample t-test. The assumption tests were conducted first to ensure that the data met the requirements of parametric statistical analysis. All analyses were performed using SPSS software, aimed at determining whether there were significant differences between the experimental and control groups in terms of the dependent variable, namely students' environmental awareness attitude.

III. RESULTS AND DISCUSSION

A. Research Results

1. Instrument Testing

a) Validity Test

The validity of the questionnaire was tested using 35 statements that had previously been validated by expert lecturers. The validity analysis of the environmental awareness attitude questionnaire was performed using SPSS. Each item was considered valid if the calculated r-value (r_h) was greater than the table r-value (r_t) ($r_h > r_t$), or if the significance value of each item was less than 0.05 (sig < 0.05).

b) Reliability Test

The reliability of the questionnaire was analyzed using SPSS and is presented in the following table:

Table 2. Reliability Test Results of the Questionnaire

Reliability Statistics	
Cronbach's Alpha	N of Items
.883	35

Based on the table, the overall reliability of the questionnaire instrument showed a Cronbach's Alpha of 0.883. With N = 35 and a significance level of 5%, the r_t value is 0.367. Since the calculated reliability (0.883) > r_t (0.367), it can be concluded that the questionnaire is reliable and can be used for data collection.

2. Assumption Testing

a) Normality Test

The normality of the data distribution was tested using the Kolmogorov-Smirnov method in SPSS, as the sample size was 70. The decision criterion is as follows: if sig. > 0.05, the data are normally distributed; if sig. < 0.05, the data are not normally distributed. The results of the normality test for the environmental awareness attitude questionnaire are shown in the following table:

Table 3. Normality Test Results for the Environmental Awareness Attitude Questionnaire

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		35
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	3.42727063
Most Extreme Differences	Absolute	.130
	Positive	.077
	Negative	-.130
Test Statistic		.130
Asymp. Sig. (2-tailed)		.140[c]
a. Test distribution is Normal.		
b. Calculated from data.		
c. Lilliefors Significance Correction.		

Based on the Kolmogorov-Smirnov normality test, the significance value for both the experimental and control classes was 0.140 (> 0.05). This indicates that the questionnaire data from both classes are normally distributed.

b) Homogeneity Test

The homogeneity test was conducted to determine whether the data from the two research groups have equal variances. Data are considered homogeneous if the significance value (sig.) > 0.05, and not homogeneous if sig. < 0.05. The results for the environmental awareness attitude questionnaire are shown in the following table:

Table 4. Homogeneity Test Results for the Environmental Awareness Attitude Questionnaire

Test of Homogeneity of Variances					
		Levene Statistic	df1	df2	Sig.
Sikap Peduli Lingkungan	Based on Mean	.911	1	68	.343
	Based on Median	.649	1	68	.423
	Based on Median and with adjusted df	.649	1	63.297	.424
	Based on trimmed mean	.813	1	68	.370

The homogeneity test using SPSS yielded a significance value of 0.343 (> 0.05). This indicates that the data from both the experimental and control classes have equal variances and are considered homogeneous.

c) Hypothesis Testing

This study aimed to determine the effect of the Outdoor Learning model on students' environmental awareness attitudes in the topic of environmental pollution for tenth-grade students at MAN 2 Blitar. The Independent Sample t-test was used to compare the environmental awareness attitude scores between the experimental and control groups.

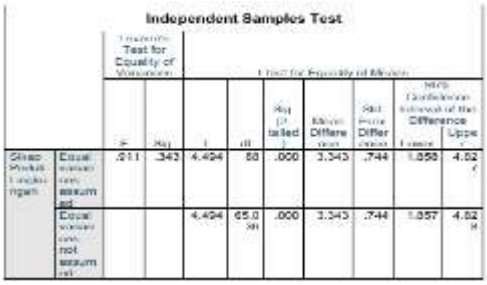
The hypotheses tested were:

H_0: The Outdoor Learning model has no effect on environmental awareness attitudes.

H_a: The Outdoor Learning model has an effect on environmental awareness attitudes.

Decision criteria: If Sig. (2-tailed) < 0.05, H_0 is rejected, and H_a is accepted. If Sig. (2-tailed) > 0.05, H_0 is accepted, and H_a is rejected. The results of the hypothesis test using SPSS version 26 are presented in the following table:

Table 5. Independent Sample T-test Results for Environmental Awareness Attitudes



Sikap Peduli Lingkungan	Equal variances assumed	.911	.343	4.494	68	.000	3.343	.744	1.858 4.82
	Equal variances not assumed			4.494	65.0	.000	3.343	.744	1.857 4.82

Based on the results, the significance value (Sig. 2-tailed) was 0.000 (< 0.05), indicating that H_0 is rejected and H_a is accepted. Therefore, the group-based Outdoor Learning model significantly affects students' environmental awareness attitudes.

B. Discussion

The Effect of Outdoor Learning on Environmental Awareness Attitudes

This study demonstrates that the implementation of the Outdoor Learning model has a significant effect on students' environmental awareness attitudes. This is evidenced by the statistical analysis using the Independent Sample t-test, which yielded a significance value of 0.000 < 0.05. This indicates a significant difference between the experimental and control groups in terms of environmental awareness attitudes after the learning process. The difference is further highlighted by the mean questionnaire scores, which were 76.02 for the experimental class and 72.68 for the control class, reflecting an increase of 3.34 points. This clearly shows the tangible impact of applying the Outdoor

Learning model on students' development of environmental awareness.

Furthermore, the normality test showed a significance value of 0.140 > 0.05, and the homogeneity test produced a value of 0.343 > 0.05, indicating that the data were normally distributed and the variances between groups were homogeneous. These conditions justify the use of parametric tests such as the t-test, making the results statistically valid. With these assumptions met, it can be confidently concluded that the Outdoor Learning model is effective in enhancing students' environmental awareness attitudes.

These findings align with Anggraini (2018), who demonstrated that outdoor learning strategies are more effective than indoor strategies, particularly for students with an internal locus of control. In her study, the average environmental awareness attitude score for the experimental group reached 58.7, higher than 52.6 for the conventional learning group, with a two-way ANOVA result showing $F_h = 6.35 > F_t = 4.08$. Similarly, Sajidan et al. (2022) found that the application of Outdoor Learning through edutainment activities based on local potential increased environmental awareness scores from 51.52 to 82.85, reinforcing the idea that active, experiential learning effectively fosters meaningful environmental awareness.

The Outdoor Learning model is conceptually rooted in experiential learning theory (Kolb, 1984), which emphasizes that effective learning occurs through direct experience followed by reflection and application. When students learn outside the classroom and interact directly with natural or social environments, they gain not only cognitive knowledge but also affective experiences that foster awareness and concern for their surroundings. Thus, Outdoor Learning serves as a strategic method to instill environmental values in a contextual and meaningful way.

Pedagogically, Outdoor Learning allows students to observe, feel, and understand the connection between human behavior and environmental conditions. Activities such as ecosystem observation, waste management, tree planting, or direct exploration of natural resources promote empathy and responsibility for environmental preservation. In these activities, students are not merely passive recipients of information but active participants in caring for their environment. This aligns with attitude formation theory (Azwar, 2015), which states that attitudes are shaped through direct experience and internalization of values. Therefore, outdoor learning experiences provide direct stimuli for students to internalize environmental care into daily behavior.

From an affective perspective, Outdoor Learning also plays a critical role in fostering ecological awareness. Learning activities conducted in natural settings allow students to recognize the environment as an integral part of human life. Through direct interaction with nature, students can understand cause-and-effect relationships between human actions and environmental consequences, such as pollution, erosion, or habitat damage. This awareness fosters reflective attitudes and personal responsibility for ecosystem sustainability, consistent with Hungerford and Volk (1990), who argue that direct experience in nature is a key factor in promoting pro-environmental behavior.

The systematic syntax of the Outdoor Learning model further supports the development of environmental awareness. During the preparation stage, students are briefed on activity objectives and the importance of ethical and safe behavior in the environment, instilling a sense of responsibility from the outset. In the implementation stage, students engage in observation, exploration, or conservation activities, fostering a sense of ownership over the environment. The reflection and discussion stage deepens students' understanding of the impact and meaning of the activities, transforming learning experiences from mere physical actions into value-conscious awareness. Finally, during the evaluation and follow-up stage, students are encouraged to apply environmentally conscious behaviors in daily life. Each stage of Outdoor Learning contributes to the cognitive, affective, and psychomotor aspects that support holistic environmental awareness.

Previous studies also reinforce the positive relationship between Outdoor Learning and environmental awareness attitudes. For instance, Nugroho (2020) found that the implementation of Outdoor Learning significantly increased students' awareness and participation in maintaining school cleanliness. Likewise, Wahyuni and Sari (2021) reported that outdoor environmental learning fosters ecological responsibility and

environmentally friendly habits among elementary students. These findings indicate that Outdoor Learning not only improves cognitive learning outcomes but also plays a crucial role in shaping students' character and environmental values. By using the environment as a learning resource, students internalize ecological values and develop habits of appreciating, protecting, and preserving their surroundings, fostering a generation that is ecologically knowledgeable, responsible, and environmentally conscious.

The significant improvement in environmental awareness attitudes in the experimental class was clearly identified through questionnaire results and direct observation during Outdoor Learning activities. This learning model provides ample opportunity for students to actively engage with their environment, leading to deeper ecological awareness. Based on the data, this improvement is reflected across six main indicators of pro-environmental behavior:

1. Care for cleanliness and tidiness: Performing actions such as picking up litter in the learning area, sweeping, and maintaining the order of learning tools outdoors.
2. Reducing single-use plastics: Bringing reusable water bottles and avoiding plastic packaging during outdoor activities.
3. Sorting and disposing of waste properly: Separating organic and inorganic waste and understanding the importance of this practice through hands-on field activities.
4. Awareness of reducing greenhouse gas emissions: Engaging in environmentally friendly behaviors such as walking to nearby learning locations, carpooling, and conserving electricity and electronic devices during outdoor lessons.
5. Saving energy and water: Developing habits like turning off lights and fans when not in use and properly closing water taps after use.
6. Improving and beautifying the environment: Planting decorative plants around the school and creating plant pots from recycled plastic bottles as part of creative recycling activities (Irfianti et al., 2016).

IV. CONCLUSIONS AND SUGGESTIONS

A. Conclusion

Based on the results of the research and data analysis, it can be concluded that there is a significant effect of the Outdoor Learning model on students' environmental awareness attitudes. The experimental class, which received treatment through the Outdoor Learning model, showed higher environmental awareness compared to the control class, which did not receive similar treatment. The findings indicate that the implementation of the Outdoor Learning model significantly improves the environmental awareness attitudes of Grade X students at MAN 2 Blitar on the topic of environmental pollution.

This is evidenced by the mean score of the environmental awareness questionnaire in the experimental class, which was 76.02, higher than the control class, which scored 72.68. Furthermore, the hypothesis test using the Independent Sample t-test yielded a significance value of $p = 0.000$ (< 0.05), indicating that H_0 was rejected and H_a accepted, confirming a significant difference between the two groups.

B. Suggestion

Based on the results of this study, several recommendations are proposed:

1. For teachers: It is recommended to implement the Outdoor Learning model to foster environmental awareness through contextual, experiential learning.
2. For students: Students are encouraged to be more active and responsible during outdoor activities and to apply environmental care values in their daily lives.
3. For schools: Schools are advised to support environmental-based learning by providing appropriate facilities and policies that facilitate Outdoor Learning activities.
4. For future researchers: It is suggested to further explore Outdoor Learning as an alternative learning model, particularly for Biology or Science subjects, and to enrich this research by including additional variables.

REFERENCES

Afdillah, Anas, N., & Ulfa, S. W. (2023). Pengaruh Problem Based Learning Berbasis Outdoor Study Terhadap Kemampuan Berpikir Kritis Siswa SMA Pada Materi Sistem Pernapasan. Jurnal Ilmu Sosial, Bahasa Dan Pendidikan, 3(4), 92–107.

Amarullah, A. K. (2022). Dasar-Dasar Pendidikan. At-Ta'lim Jurnal Kajian Pendidikan Agama Islam, 4(2), 1–11.

Andryannisa, M. A., Wahyudi, A. P., & Sayekti, S. P. (2023). Upaya Meningkatkan Hasil Belajar Siswa Dengan Menggunakan Metode Resitasi Pada Mata Pelajaran Akidah Akhlak Di SD Islam Riyadhul Jannah Depok. Pediaqu: Jurnal Pendidikan Sosial Dan Humaniora, 2(3), 11716–11730. https://repositorio.ufsc.br/xmlui/bitstream/handle/123456789/167638/341506.pdf?sequence=1&isAllowed=y%0Ahttps://repositorio.ufsm.br/bitstream/handle/1/8314/LOEBLEIN%2C LUCINEIA CARLA.pdf?sequence=1&isAllowed=y%0A https://antigo.mdr.gov.br/saneamento/proees

Anggraeni, D. D. (2018). Pengaruh Strategi Pembelajaran (Outdoor/Indoor) Dan Locus Of Control Terhadap Sikap Peduli Lingkungan. Jurnal Ilmiah Pendidikan Dasar, 3(2), 91–102.

Harahap, H. S., Ariani, N. H., & Harahap, D. A. (2022). Pencemaran Lingkungan. In Journal of the American Chemical Society. CV. EL. https://cursa.ihmc.us/rid=1R440PDZR-13G3T80-2W50/4. Pautas-para-evaluar-Estilos-de-Aprendizajes.pdf

Hungerford, H. R., & Volk, T. L. (1990). Changing learner behavior through environmental education. The Journal of Environmental Education, 21(3), 8–21. https://doi.org/10.1080/00958964.1990.10753743

Irfianti, M. D., Khanafiyah, S., & Astuti, B. (2016). Perkembangan Karakter Peduli Lingkungan melalui Model Experiential Learning. Unnes Physics Education Journal, 5(3), 73–76. http://journal.unnes.ac.id/sju/index.php/upej

Junedi, B., Mahuda, I., & Kusuma, J. W. (2020). Optimalisasi keterampilan pembelajaran abad 21 dalam proses pembelajaran pada Guru MTs Massaratul Mut'allimin Banten. Transformasi: Jurnal Pengabdian Masyarakat, 16(1), 63–72. https://doi.org/10.20414/transformasi.v16i1.1963

Kolb, D. A. (1984). Experiential learning: Experience as the source of learning and development. Englewood Cliffs, NJ: Prentice-Hall.

Laksita, R., Dewi, E. R. S., & Nurwahyunan, A. (2017). PENGARUH OUTDOOR LEARNING PADA MODEL DISCOVERY LEARNING TERHADAP HASIL BELAJAR SISWA MATERI PENCEMARAN LINGKUNGAN. Jurnal Pendidikan Ipa Veteran, 1(1), 1–7. http://e-journal.ivet.ac.id/index.php/jipva/article/view/511

Nainggolan, A., Sinurat, A., Purba, T., Arent, E., & Meilitasari, R. (2023). Peran Pembelajaran Pendidikan Lingkungan Sosial Dalam Pembentukan Sikap Peduli Lingkungan Peserta Didik. Journal on Education, 5(4), 13166–13171. https://doi.org/10.31004/joe.v5i4.2317

Nugroho, A. D. (2020). Penerapan model pembelajaran outdoor learning untuk meningkatkan kepedulian terhadap lingkungan siswa sekolah dasar. Jurnal Pendidikan Dasar Indonesia, 5(2), 75–84.

Patimah, N. N. (2025). Adaptasi Siswa Terhadap Pembelajaran Pendidikan Pancasila dalam Kurikulum Merdeka. Lencana : Jurnal Inovasi Ilmu Pendidikan, 3(1), Hal 351-362. Hal 352.

Qodriyanti, A., Yarza, H. N., Irdalisa, Elvianasti, M., & Ritonga, R. F. R. (2022). Analisis Sikap Peduli Lingkungan Siswa di Salah Satu MAN pada Materi Pelestarian Lingkungan. Jurnal Eksakta Pendidikan (Jep), 6(1), 111–116. https://doi.org/10.24036/jep/vol6-iss1/643

Rose, A., Sumarmi, S., & Benardi, A. I. (2023). Efektivitas model project based learning dengan pembelajaran outdoor dalam meningkatkan sikap peduli lingkungan peserta didik pada materi mitigasi bencana alam. Jurnal Integrasi Dan Harmoni

Inovatif Ilmu-Ilmu Sosial, 3(7), 717–725. https://doi.org/10.17977/um063v3i7p717-725

Sajidan, S., Atmojo, I. R. W., Saputri, D. Y., & Ardiansyah, R. (2022). Keefektifan Model Pembelajaran Outdoor Learning melalui Wisata Edutainment untuk Menumbuhkan Sikap Peduli Lingkungan Siswa Sekolah Dasar. DWIJA CENDEKIA: Jurnal Riset Pedagogik, 6(2), 175. https://doi.org/10.20961/jdc.v6i2.61541

Sugiyono. (2015). Metode Penelitian Kuantitatif, Kualitatif dan R&D. Alfabeta.

Suherdiyanto. (2014). Penerapan metode pembelajaran diluar kelas (outdoor study) dalam materi permasalahan lingkungan dan upaya penanggulangannya pada peserta didik Mts Al-Ikhlas kuala mandor B. Sosial Horizon: Jurnal Pendidikan Sosial, 1(1), 95–108.

Tamba, A. B. (2024). Pengaruh Model Pembelajaran Inkuiri Terhadap Hasil Belajar Dan Sikap Peduli Lingkungan Siswa Sma Santo Ignasius Medan Pada Materi Pencemaran Lingkungan Tp 2023/2024. Quaerite Veritatem : Jurnal Pendidikan, 4(1), 1–8. https://doi.org/10.53842/qvj.v4i1.63

Wahyuni, E., & Sari, R. M. (2021). Pengaruh pembelajaran berbasis lingkungan terhadap sikap peduli lingkungan siswa. Jurnal Pendidikan Lingkungan dan Pembangunan Berkelanjutan, 22(1), 55–65.

Wandini, R. R., Sari, P. Z., Rini, N. I., Aprianni, S., & Rahmadani, A. (2022). Menerapkan Proses Keterampilan Dalam Pembelajaran IPA di MI/SD. Jurnal Pendidikan Dan Konseling, 4(3), 1349–1358.