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Outdoor Education: Perspectives of Teachers and Students in the Context of School in Nature as an Innovative Approach in Education

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Abstract: This research analyzed the opinions of primary school teachers and students regarding the benefits of outdoor education, using the example of School in Nature, for the organization of educational activities within the instruction process. It explored educational, social, recreational, and ecological aspects, as well as the existing differences in their opinions. The research was conducted on a sample of elementary school teachers and fourth-grade students in the Bor District in the Republic of Serbia. The research involved 223 participants (elementary school teachers N=73, and fourth-grade students N=150). A questionnaire was designed for the purposes of this research to assess the opinions of teachers and students towards the learning environment and the effectiveness of implementing outdoor education in the context of School in Nature. The research results indicate a compliance between teachers' opinions about the significance of outdoor education, especially through School in Nature, and its benefits to the educational aspect of the teaching process. Students displayed positive attitudes related to social interaction in learning, emphasizing the development of positive social relationships and skills. Differences in opinions between teachers and students regarding the learning environment and the effectiveness of outdoor education in meeting learning objectives represent a significant starting point for better understanding the quality of the teaching process.

Keywords: outdoor education, School in Nature, learning environment, student, teacher.

Introduction

Outdoor education, having the forms of field trips or experiential learning, is becoming an increasingly significant component of education systems worldwide. It provides students with a unique opportunity to expand their knowledge and levels of understanding through practical experiences outside the classroom. Outdoor education represents an innovative approach to education that goes beyond the traditional inclass learning. This learning method involves taking students outside the school premises to gain practical knowledge, explore nature, and apply acquired knowledge in real-life situations. Outdoor education utilizes interactive and experiential learning methods to foster engagement, motivation, and a deeper understanding of learning topics. Conducting lessons outside the classroom, as a specific aspect of the teaching process, allows for a direct connection between the school and the real world, simultaneously stimulating motivation and curiosity among students, while providing teachers with the opportunity to change their practices (Rickinson et al., 2004; Anđelković and Mihajlović, 2012; Radivojević and Jelić, 2016; Ristić and Blagdanić, 2017; Enăchescu, 2019; Milosavljević Đukić, Bogavac and Stojadinović, 2022; Mitic, Dejkovic and Zlatanović Marković, 2022; Begić, 2022; Borsos, Fekete and Boric, 2023).

The primary goal of outdoor education is to provide students with optimum learning conditions directly derived from experience, which can be a powerful tool for developing critical thinking, teamwork, problem-solving skills, and emotional intelligence (Auer, 2008). Outdoor education also provides an opportunity for the integration of different subjects and disciplines, allowing students to connect various aspects of knowledge and understand their application in the real world. Experiences gained through outdoor activities compel teachers to integrate activities inside and outside the classroom to create a favorable environment for the education process. These activities that students experience, both inside and outside the classroom, contribute to a sustainable process of learning and development (Kocayığıt and Ekinci, 2020). Authors Anđić and Mažar(2023) conclude that the role of a teacher, including their

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practices, emotion management, personality, and competencies, is of exceptional importance for achieving learning objectives in school subjects, as well as in interdisciplinary topics, such as sustainable development curriculum (Andić and Mažar, 2023).

An interdisciplinary approach to learning promotes the holistic development of students, fostering creativity, curiosity, and self-confidence, with the integration of different fields of knowledge being one of the key objectives of the holistic learning process. In achieving this goal, outdoor activities play a significant role, allowing students to connect theoretical knowledge with real-life experiences and application in the natural learning environment (İleritürk, 2023). The planning of these activities should be an integral part of the teaching process.

Findings from some research indicate a possible positive impact of spending time in nature on students' cognitive functions and their interest in learning. Being in nature enhances students' collaboration and problem-solving skills while simultaneously increasing their happiness, well-being, and motivation for learning (Manni et al., 2013; Capaldi, Dopko and Zelenski, 2014; Yli-Panula, Jeroneni and Lemmety, 2019). According to relevant studies, this effect can result in increased student engagement in the classroom, which has the potential to enhance their learning achievements. This leads to the conclusion about the significance of incorporating natural elements into the education process as a potentially beneficial factor for supporting cognitive functioning and student learning.

The results of the research conducted by the group of authors (Kuo, Browning and Penner, 2018) describe the practice of supporting and encouraging students during the learning and development process, which they refer to as "Refueling Students in Flight." In their findings, the authors emphasize the importance of providing continuous support through natural resources to enable students to progress and achieve their academic and personal goals. In this research, the hypothesis that outdoor lessons have positive, not negative effects on subsequent classroom engagement was tested. It was found that classroom engagement was significantly better after outdoor lessons than after regular lessons. Such results suggest that outdoor lessons can actually motivate students to engage more in regular lessons, even when they explore content that is not directly available to them. This practice, referred to as "Refueling Students in Flight," advocates the inclusion of more outdoor lessons in formal education (Kuo, Browning and Penner, 2018).

One of the most well-known forms of outdoor education is the "School in Nature," where students spend time in nature and actively participate in various educational activities. The organization of this form of outdoor education aims to acquaint students with objects, phenomena, processes, and achievements in nature. "School in Nature," as a form of outdoor education, carries significant educational and developmental importance because it establishes the most effective connection between the teaching process and the natural laws and phenomena. Through the implementation of the "School in Nature," teaching is efficiently linked to current social and life contexts, contributing to comprehensive development and the improvement of students' personalities, providing an opportunity for a deeper understanding and practical application of acquired knowledge.

The perspectives of teachers and students play a crucial role in shaping and assessing the success of any educational approach, including outdoor education. The teacher's perspective involves planning and organizing field activities, adapting teaching methods and materials, and managing the group of students. Teachers are essential for the successful implementation of outdoor education because they are responsible for ensuring the safety of students, motivating learning, and maximizing the benefits of the field experience. They must be experts in their subject areas but also need to be capable of adapting to changing circumstances and student needs during the field trip. On the other hand, the perspective of students is crucial for understanding the impact of outdoor education on their development, motivation, and engagement. Through the "School in Nature," students gain practical experiences that stimulate their curiosity, creativity, and self-confidence. Through outdoor education, students have the opportunity to apply acquired knowledge and skills in the real world, develop interpersonal and teamwork skills through collaboration with peers and teachers, and form an awareness of nature and the environment, understanding the importance of preserving natural resources.

The competencies required of teachers for outdoor activities are dynamic and complex due to the close connection to the pedagogical, psychological, methodological, didactic, and subject-specific competencies of teachers. As such, these activities encompass the following: fostering students' creativity, critical thinking, good communication, innovation, research, problem-solving, and environmental awareness. In the outdoor environment, the teacher should provide individual support to students, motivate them to take charge of their own learning, support different learning styles, provide appropriate feedback on their work, and ensure a safe learning environment.

The dedication teachers invest in the planning and implementation of learning material often dictates

the impact outdoor education will have on students. Linking outdoor education with classroom concepts implies that teachers adapt experiential learning in informal settings to stimulate interest, motivation, and a desire for exploration and knowledge acquisition in students. This will enable the improvement of learning in a formal context. If classroom education is enhanced with one of the forms of outdoor education, such as teaching in the schoolyard, visits to natural, cultural, sports, and economic facilities, "School in Nature," field trips and so on, and if it is done with the intention of integrating curriculum content, where multiple subjects are simultaneously organized, students will better understand the content, actively engage in the learning process, take responsibility for self-learning, etc. The essence of the mutual complementarity of classroom and outdoor education and their integration into a unified and high-quality education process is that teachers and students nurture and create pedagogical, educational, and learning strategies that are occasionally realized in nature (Jurčić, 2015).

The research in this paper is focused on examining the opinions of teachers and students in elementary schools regarding the importance of implementing "School in Nature" as a form of outdoor education, concerning its educational effectiveness, the quality of organization, and the aspect of "innovation" in the teaching process. The quality of education is determined by its structure, learning materials, teaching methods, and the ability to direct learning towards concrete interaction with the environment. The aspect of "innovation" is reflected in the cognitive, psychological, and geographic spheres (Orion and Hofstein, 1994). The significance of the "School in Nature" is evident in the realm of practical and empirical application of acquired knowledge, the development of social relationships, as well as in the sports and recreational aspect. "School in Nature" represents an understanding of the educational and pedagogical significance and its contribution to increasing students' academic achievements. As a form of outdoor education, it is pedagogically grounded and interesting to students in learning of subject matter content. What is most remembered aspect in adulthood, related to a school field trip, is the escape from the classroom routine (Pace and Tesi, 2004).

The research conducted is significant in the field of learning environments because there are very few studies that pertain to the effectiveness of the outdoor learning, emphasizing the natural environment and practical education, which provides a positive learning environment and the study of the Nature and Society subject. Research shows that teachers often avoid outdoor learning because "School in Nature" is not a pleasant experience for them (Fido and Gayford, 1982).

However, many researchers believe that the environment to which students are exposed and how students feel in the classroom also influence their interest in the learning process (Fraser, 2012). As a result of exposure to a favorable learning environment, students achieve higher academic performance (Fraser, Fisher and McRobbie, 1996). One of the main shortcomings mentioned is the factor of "novelty." Students may become distracted when exposed to a new environment, spending too much time adapting to the new surroundings, which can deter them from actual learning. An analysis of studies has shown that organized education activities in nature are a powerful tool that helps improve learning performance, social, emotional, and personal development, contributing to the preservation and enhancement of students' health. Additionally, outdoor learning activities can be attributed to active teaching methods, and at the same time, outdoor education provides a favorable psycho-emotional space for the mental, physical, social, and moral well-being of students.

Materials and Methods

The aim of the research is to examine the opinions of elementary school teachers and students regarding the importance of outdoor education, specifically through the example of the School in Nature, in organizing learning activities and meeting learning objectives. The research seeks to identify their opinions towards the benefits of outdoor education (School in Nature) and various aspects of the teaching process, such as the educational, social, recreational, and ecological aspects, and finally to identify any differences in the opinions of teachers and students. The operationalization of the objective was carried out through the following tasks:

1. Examine teachers' opinions on the importance of outdoor education, especially through the example of the School in Nature, in various aspects of the teaching process (educational, social, recreational, and ecological).
2. Investigate students' opinions regarding the benefits of outdoor education, especially through the example of the School in Nature, in various aspects of the teaching process (educational, social, recreational, and ecological).
3. Identify the existing differences in the opinions of teachers and students regarding outdoor

education, especially through the example of the School in Nature, in organizing learning activities and meeting learning objectives.

The initial research hypothesis is as follows: Teachers and students recognize the importance of outdoor education, especially through the application of the School in Nature, in organizing learning activities and meeting learning objectives.

The following auxiliary hypotheses have been proposed:

h1: There is compliance between teachers' opinions regarding the significance of outdoor education, using the example of School in Nature, and its benefits for the educational aspect of the teaching process.

h2: There is compliance between students' opinions regarding the significance of outdoor education, using the example of School in Nature, and its contribution to various aspects of the teaching process, particularly in the social and recreational aspects.

h3: There are statistically significant differences in the opinions of teachers and students regarding the contribution of outdoor education, using the example of School in Nature, to the realization of learning activities within the instruction process, with the expectation that teachers will express a higher degree of recognition of the importance of outdoor education compared to students.

The research was conducted on a sample of primary school class teachers and fourth-grade students in the Bor district in the Republic of Serbia. A total of 223 participants took part in the study, with 73 primary school class teachers (N=73) and 150 fourth-grade students (N=150). Out of the 73 surveyed primary school class teachers, 43 (58.9%) were from urban schools, and 30 (41.1%) were from rural schools. Among the 150 students, 88 (58.7%) were from urban schools, and 62 (41.3%) were from rural schools.

In the study, a specially designed Likert-type questionnaire was used, where participants rated their agreement on a scale of 1 to 5, with 5 being "completely agree", 4 being "agree", 3 being "undecided", 2 being "disagree", and 1 being "completely disagree". This questionnaire was designed to assess the opinions of teachers and students regarding their attitudes towards the learning environment and the effectiveness of implementing outdoor education, with a focus on the School in Nature program. Numeric data were presented using mean, standard deviation, as well as minimum and maximum values. Student's t-test was used to examine the differences between teachers and students. Statistical significance was defined at a probability level of $p \leq 0.05$. Statistical analysis was performed using the SPSS software version 25.

Results

The first research objective aimed to investigate teachers' opinions regarding the importance of outdoor education, particularly through the School in Nature program, in various aspects of the educational process (educational, social, recreational, and environmental). Teachers expressed their level of agreement with statements about the educational, social, recreational, and environmental aspects of the education process in the context of the School in Nature on a five-point Likert scale. The results of the study are shown in Table 1.

Teachers believe that outdoor education, such as the School in Nature program, has the most significant impact on the development of positive social relationships among students (M=4.6). It also contributes to increased student achievements (M=4.1) and encourages students to engage in recreational activities (M=3.8). However, it has the least impact on the development of students' skills (M=3.7). Research findings obtained during the survey of teachers' opinions about the influence of outdoor education within the educational and pedagogical aspects indicate that teachers believe that School in Nature has the biggest effect on the more successful organization of the teaching process and education in general (M=4.4). These research findings are corroborated by teachers' opinions that the learning environment provided by the School in Nature contributes to students' more successful mastery of the curriculum (M=4.2). Teachers assess that the practical and empirical learning space within the School in Nature particularly contributes to the more successful implementation of the Natural Sciences and Society subject content (M=4.0). They also recognize the significant effectiveness of outdoor education in delivering the curriculum of all subjects (M=4.1). In connecting outdoor education with the classroom concept, teachers see a high contribution in acquiring knowledge and competencies related to environmental conservation, social community, culture, and the environment that the School in Nature provides (M=4.1). Teachers believe that students' engagement in choosing the destination mostly affects the effectiveness of outdoor educational activities (M=4.5). Moreover, students' desire for exploration and knowledge acquisition in natural settings is encouraged by the formal classroom learning enhanced with destination-related

content, providing students with essential knowledge of concepts related to interacting with the natural setting of the selected destination (M=4.2). Teachers emphasize the importance of planning experiential learning within outdoor education and the alignment of the School in Nature programs with subject content (M=4.0). The research findings indicate that teachers are aware of deficiencies in the preparation and implementation of outdoor education (M=1.6) and believe that teacher training, encompassing the planning and execution of the School in Nature, would be highly beneficial for future educational work in the classroom (M=4.0).

Table 1

Teachers' opinions on the significance of outdoor education in terms of the educational, social, recreational, and ecological aspects

	N	Min	Max	M	SD
Contribution of outdoor education / School in nature to the:					
more successful mastery of the curriculum by students	73	3.00	5.00	4.260	0.624
more successful implementation of the Nature and Society subject	73	3.00	5.00	4.041	0.676
more successful implementation of all subjects' curriculum	73	2.00	5.00	4.110	1.021
more successful organization of the education process and instruction in general	73	3.00	5.00	4.479	0.669
improved student achievements	73	3.00	5.00	4.164	0.817
development of positive social relationships	73	4.00	5.00	4.685	0.468
development of students' abilities	73	2.00	5.00	3.781	0.989
encouragement of recreational activities	73	2.00	5.00	3.849	0.811
acquisition of knowledge and competencies about nature conservation, community, culture, and the environment	73	3.00	5.00	4.150	0.739
Planning and preparation for outdoor instruction:					
Knowledge about the destination	73	3.00	5.00	4.233	0.773
Previously acquired knowledge about the basic concepts related to the destination	73	3.00	5.00	4.247	0.703
Student involvement in choosing the destination	73	3.00	5.00	4.521	0.669
Alignment of the School in Nature program with the subject content	73	3.00	5.00	4.041	0.676
Teacher education in the field of planning and implementation	65	3.00	5.00	4.061	0.845
Limitations:					
Preparation	73	1.00	3.00	1.671	0.625
Implementation	65	1.00	3.00	1.692	0.727

N=number of respondents, Min=minimum, Max=maximum, M=Mean, SD=Standard deviation

The second research objective aimed to examine the opinions of students regarding the significance of extracurricular activities through educational, social, recreational, and environmental aspects of the educational process. Students expressed their agreement or disagreement on a five-point Likert scale with statements related to the School in Nature. The results of the research are presented in Table 2.

Students find classes conducted outside the classroom very interesting (M=4.6) because they believe they learn more than in regular classroom lessons (M=4.5). Research findings on students' opinions regarding the contribution of School in Nature show that students support activities conducted outside the classroom because they actively engage in the learning process when conducting research to solve problems (M=4.2) related to various educational content (M=4.2). From the students' perspective, the contribution of outdoor education is primarily associated with the development of positive social relationships among students (M=4.2) and the encouragement of sports and recreational activities (M=3.3). Lower scores are recorded in terms of students' assessments related to the contribution to increasing student achievements (M=2.1) and the development of students' abilities (M=2.3). Students

see the importance of School in Nature in mastering subject matter through concrete activities (M=4.1). According to students, the effectiveness of the outdoor environment, which emphasizes the natural environment, is reflected in the fact that it allows them to practically form a relationship with nature and its values, the social community, culture, and the environment (M=3.8). Students believe that the practical and empirical application of acquired knowledge is reflected in the way they can more easily connect the phenomena and objects they encounter in the natural environment in an interesting and engaging manner (M=3.5) and relate them to multiple subjects (M=3.4). Students assess that outdoor education helps them in mastering the subject matter of Nature and Society (M=3.1) because concrete activities serve as inspiration (motivation) for further research in the subject and natural phenomena (M=3.0). Students have a limited perception of the complementarity between classroom and outdoor education, as evidenced by the lower scores related to their assessments of success in acquiring educational content in the classroom (M=2.8) and active participation in teamwork (M=2.8). Their interest in the learning process outside the classroom is minimal, as indicated by the research results of student perceptions of School in Nature regarding the clarity of educational content after its practical application (M=2.7) and the efficiency in solving tasks in a natural environment (M=2.2). Students believe that there is a need for alignment between the School in Nature program and the subject content (M=3.5) to improve awareness of the destination aimed at forming initial attitudes towards learning outside the classroom (M=2.4) and increasing their interest in acquiring basic knowledge related directly to educational tasks (M=2.0).

Table 2
Students' opinions about the importance of outdoor education

	N	Min	Max	M	SD
The benefits of outdoor education:					
Mastering subject matter through concrete activities	150	2.00	5.00	4.100	1.002
Mastery of subject matter in Nature and Society through research	150	1.00	5.00	3.187	1.083
Getting to know phenomena and objects in an interesting and engaging way	150	2.00	5.00	3.507	0.925
Success in acquiring educational content in the classroom	150	1.00	5.00	2.867	0.748
Clarity of educational content after its practical application	150	1.00	5.00	2.793	0.922
Inspiration (motivation) for further exploration of subjects and natural phenomena	150	2.00	5.00	3.060	0.869
The class is interesting when conducted outside the classroom	150	4.00	5.00	4.600	0.492
I learn more outside the classroom than during regular school lessons	150	4.00	5.00	4.547	0.499
Educational content encountered in the natural environment can be more easily connected across multiple subjects	150	2.00	5.00	3.413	0.921
Active participation in teamwork	150	1.00	5.00	2.833	1.089
Outdoor education for various educational content	150	3.00	5.00	4.207	0.745
Efficiency in solving tasks in a natural environment	150	1.00	5.00	2.260	1.045
Attitude towards nature and its values, the social community, culture, and the environment	150	2.00	5.00	3.886	0.952
Conducting research to solve problems	150	3.00	5.00	4.253	0.697
Increasing student achievements	150	1.00	5.00	2.193	1.073
Developing students' abilities	150	1.00	5.00	2.353	1.024
Developing positive social relationships among students	150	3.00	5.00	4.293	0.719
Encouragement of sports and recreational activities	150	1.00	5.00	3.307	1.158
Organization of outdoor education					
Awareness of the destination for forming initial attitudes towards learning outside the classroom	150	1.00	5.00	2.413	1.205
Alignment of the School in Nature program with subject content	150	2.00	4.00	3.553	0.596
Basic knowledge of concepts directly related to educational tasks	150	1.00	5.00	2.027	1.198

N=number of respondents, Min=minimum, Max=maximum, M=Mean, SD=Standard deviation

The third research task focused on examining the differences in the opinions of teachers and students regarding the significance of outdoor education, using the example of School in Nature. The attitudes of teachers and students were assessed concerning the organization, planning, alignment of

program content, as well as their perceptions of the educational and pedagogical effectiveness in terms of the contributions to the educational process and the quality of the educational process. A T-test for large independent samples indicates that there is a statistically significant difference in the perception of certain elements of the importance of outdoor education, as exemplified by School in Nature, between teachers and students. The research results obtained are presented in Table 3.

Statistically significant differences were identified in the opinions of teachers and students regarding organization, planning, and alignment of curriculum. Teachers expressed their competence for conducting outdoor education by stating that geographical (4.49 ± 0.50), intellectual (4.40 ± 0.66), and psychological (5.00 ± 0.00) preparation is necessary to provide a positive learning environment in School in Nature. In contrast, students gave lower scores, $p=0.000$. In the assessments by students, there is a prevailing attitude compared to teachers related to the evaluation process after the activities in School in Nature. According to students, this evaluation is necessary to understand the significance of outdoor education in achieving the educational and pedagogical goals in the area of pragmatic and empirical application of acquired knowledge and experiences (1.97 ± 0.75), $p=0.000$. Within the sphere of educational and pedagogical effectiveness in the educational process, teachers emphasize the cognitive domain (knowledge acquisition) more (3.88 ± 0.76) compared to students (3.19 ± 1.08), $p=0.000$. However, for students, the affective domain (attitudes, values, interests) is of greater importance (4.25 ± 0.70) compared to teachers (3.92 ± 0.95), $p=0.000$. In the psychomotor domain (skills, abilities), both teachers and students have similar preferences (aspirations) to be achieved in the outdoor education environment, $p=0.716$. Teachers recognize the educational and pedagogical significance of School in Nature as a form of outdoor education and its connection to the classroom concept through experiential learning in formal and informal settings (4.01 ± 0.77). In contrast, students' interest in the learning process is significantly lower (2.05 ± 1.02), $p=0.000$. The outdoor education environment, which involves organizing the educational process through participant interaction and implementing content, is equally acceptable to both students (4.60 ± 0.49) and teachers (4.48 ± 0.67), $p=0.130$. Regarding the perceived contribution of School in Nature and its educational and pedagogical significance, a statistically significant difference is observed, with teachers recognizing its importance more than students, especially concerning students' educational achievements through content correlation between subjects (4.11 ± 0.94) and the functionality of acquired knowledge (4.47 ± 0.69), $p=0.000$. The research findings show that there are differences in the opinions of teachers and students when it comes to educational effectiveness and the quality of School in Nature's organization. Teachers more strongly emphasize the aspect of "innovation" in knowledge acquisition through outdoor education compared to the traditional classroom approach (4.41 ± 0.66), $p=0.000$. Regarding the essence of the complementarity between classroom and outdoor education, as exemplified by School in Nature, teachers recognize it more than students, especially in terms of enhancing the quality of the educational process through experimentation and research (3.73 ± 1.19) and in the higher quality of pedagogical work in activities that provide enjoyment and interest (3.96 ± 0.77), $p=0.000$. A statistically significant difference can be noticed in the opinions of teachers and students regarding the contribution of educational and pedagogical activities in nature, which provide a favorable time for relaxation from the classroom routine and the improvement of social skills. Teachers emphasize the social (4.42 ± 0.69) and adventurous aspects (4.23 ± 0.77) of outdoor education more than students, as well as the environmental aspect (4.25 ± 0.70), $p=0.000$. Regarding the sports and recreational aspect, both teachers and students believe it is a powerful tool that contributes to the preservation and enhancement of students' health, so there is no statistically significant difference in the attitudes of teachers and students on this aspect, $p=0.701$. The implementation of inclass and extracurricular activities outside the classroom, as exemplified by School in Nature, is a specific form of work where both teachers and students nurture and create situations and strategies for educational and pedagogical work in natural conditions. Students emphasize the attitude of the "use-fulness" of outdoor education (2.61 ± 1.20) more than teachers do, $p=0.000$.

Table 3
Differences in the opinions of teachers and students regarding the benefits of outdoor education

<i>The attitudes of teachers and students</i>	teachers		students		T	df	p
	M	SD	M	SD			
Organization, planning, alignment of curriculum content							
Geographical preparation	4.49	0.50	2.35	0.66	24.660	221	0,000
Intellectual preparation	4.40	0.66	2.07	0.81	21.391	221	0,000
Psychological preparation	5.00	0.00	4.55	0.50	7.642	221	0,000
Assessment	1.00	0.00	1.97	0.75	11.064	221	0,000
Contribution in the spheres of the teaching process							
Cognitive domain – knowledge acquisition	3.88	0.76	3.19	1.08	4.884	221	0,000
Affective domain – attitudes, values, interests	3.92	0.95	4.25	0.70	2.977	221	0,003
Psychomotor domain – skills, abilities	3.37	1.33	3.31	1.16	0.364	221	0,716
Quality of the teaching process							
Connecting outdoor education with the classroom concept – experiential learning in formal and informal settings	4.01	0.77	2.05	1.02	14.566	221	0,000
Organization of the teaching process through participant interaction and content implementation	4.48	0.67	4.60	0.49	1.520	221	0,130
"Content correlation between subjects	4.11	0.94	2.87	0.75	10.699	221	0,000
Functionality of acquired knowledge	4.47	0.69	3.06	0.87	12.094	221	0,000
"Innovation – acquiring knowledge through outdoor education compared to the traditional classroom approach	4.41	0.66	3.41	0.92	8.267	221	0,000
Quality of the educational process – (experimentation and research)	3.73	1.19	1.96	0.74	13.552	221	0,000
Quality of pedagogical work (enjoyment and interest)	3.96	0.77	1.69	0.63	23.281	221	0,000
Social aspect (improvement of social skills)	4.42	0.69	2.25	0.70	21.948	221	0,000
Adventure aspect (a break from the classroom routine)	4.23	0.77	2.03	1.20	14.338	221	0,000
Environmental aspect	4.25	0.70	2.41	1.21	12.032	221	0,000
Sports and recreational aspect	4.15	0.74	4.10	1.00	0.384	221	0,701
Domain of 'usefulness'	1.00	0.00	2.61	1.20	11.447	221	0,000

M=Mean, SD=Standard deviation, t= T test, df= degree of freedom, p=signification

Discussions

The research conducted in this paper aimed to examine the opinions of teachers and students in elementary schools regarding the significance of outdoor education, using the example of School in Nature, in organizing the educational and pedagogical activities within the teaching process. The research results indicate that teachers, by directing their attention to outdoor education as an innovative approach in educational and pedagogical work, are implementing a new approach that goes beyond the traditional classroom model. The concept of outdoor education in nature implies moving students outside the comfortable classroom environment and involving them in spatial activities that require deeper reflection, experimentation, and teamwork.

The first research task focused on examining the opinions of teachers about the significance of outdoor education, using the example of School in Nature, in various aspects of the teaching process (educational, social, recreational, and ecological). Based on the research results, it can be observed that teachers perceive a high contribution of outdoor education in School in Nature in the following aspects:

1. School in Nature provides opportunities for social interactive learning: Teachers believe that School in Nature has an extremely positive impact on the development of positive social relationships among students (M=4.6). This can be explained by the fact that this type of education promotes teamwork, collaboration, and mutual understanding among students. The outdoor environment promotes the importance and the need for critical reflection on the relationship between humans and nature and human-to-human relationships. When students are moved from the classroom to a natural environment, they face

new challenges that require communication and collaboration to achieve the goals of assigned activities.

2. School in Nature has great educational significance for students: Teachers recognize that outdoor education significantly benefits a more successful organization of the teaching process and overall instruction (M=4.4). This aspect may result from increased flexibility in planning and conducting educational activities outside traditional classrooms. Teachers have the opportunity to adapt educational objectives and students' needs in the outdoor environment, which can lead to more efficient and engaged learning. Teachers acknowledge that outdoor education provides a learning environment that contributes to more successful content mastery among students. They perceive outdoor activities in the zone of improving students' academic achievements (M=4.1) and see outdoor education as an organized extracurricular session aimed at stimulating students to independently acquire knowledge and skills. The outdoor learning environment provides unique opportunities to encourage the development of an individual's intellectual sphere and motivates students to voluntarily develop an interest in learning in a pedagogically designed atmosphere that contributes to more successful content mastery among students (M=4.2). Activities in the natural environment allow students to practically apply educational content, which improves their understanding and application of what they have learned. This practical application can result in better performance and long-term retention of knowledge during the learning process.

3. School in Nature fosters environmental awareness among students and serves as a link between nature and the classroom concept: Teachers acknowledge a significant contribution of outdoor education in acquiring knowledge and competencies related to nature conservation, social community, culture, and the environment (M=4.1). They also emphasize the importance of integrating outdoor education with the classroom concept to ensure that students gain fundamental knowledge about interacting with the natural environment. Integrating outdoor education with curriculum content can provide a more comprehensive understanding and application of the material. Teachers assess that School in Nature contributes to the more successful implementation of the Nature and Society subject content, as well as the content of all subjects (M=4.1).

4. School in Nature provides students with opportunities for sports and recreational activities: The research shows that teachers recognize the sports and recreational significance of outdoor education, especially in the context of School in Nature. Teachers assess that outdoor education encourages students to engage in recreational activities (M=3.8), indicating that they believe this type of education contributes to student involvement in sports and recreational activities. These activities offer opportunities for physical exercise, improving fitness and health, developing motor skills and coordination, as well as fostering teamwork, collaboration, and socialization among students. Students can experience fun and satisfaction through sports and recreational activities, which can contribute to positive motivation for learning and increased engagement in their studies. Additionally, these activities can provide a change of environment and refreshment from the typical school setting, which can enhance students' interest and engagement.

In order to achieve a significant contribution of outdoor education in the mentioned aspects and enable its integration with the classroom concept, teachers recognize the exceptional importance of involving students in the destination selection process (M=4.5) and providing comprehensive information to students about the content that allows them to gain a basic understanding of key concepts related to interactions in the natural environment of the chosen destination (M=4.2). Teachers are aware of the existing challenges in preparing and implementing outdoor education and emphasize the importance of precise planning and alignment of the School in Nature program with subject content (M=4.0). Recognizing the value of outdoor education, they highlight that teacher training, which includes planning and implementing such activities, would be of utmost importance for the further development of educational work within the classroom (M=4.0).

Research findings show that teachers recognize the innovative approach of outdoor education, such as School in Nature, as a means to break free from classroom routines and improve educational work. Their opinions indicate positive effects of outdoor education in the areas of student social relationships, the organization of the teaching process, learning efficiency, and subject integration. The research results suggest compliance between teachers' attitudes towards the significance of outdoor education, in the case of School in Nature, and its contribution to the educational aspect of the teaching process, confirming the initial hypothesis.

However, in order to further enhance the preparation and implementation of outdoor education, teachers believe they need additional training to empower and better prepare them for planning and executing such activities in line with the goals of educational work. In this way, teachers could more effectively utilize innovative teaching approaches, such as School in Nature, to improve the quality of the teaching process and the learning experience of their students, providing them with a unique opportunity for practical and experiential learning outside the classroom.

The second research task focused on examining students' opinions regarding the significance of outdoor education, using the example of School in Nature, in various educational, social, recreational, and environmental aspects of the teaching process. Students shared their views and attitudes about different aspects of outdoor education, and the research results provide insights into their satisfaction, perceptions of benefits and drawbacks, as well as suggestions for improving this type of education. Based on the research findings, it can be observed that students assess the high contribution of outdoor education, using School in Nature as an example, in the following aspects:

1. Educational aspect of School in Nature from the students' perspective: According to the research results, students express positive opinions about the contribution of outdoor education, especially School in Nature, as they see it as a platform that provides them with psychological comfort and increases motivation. Students find outdoor lessons extremely interesting ($M=4.6$) and believe that they learn more than in regular school classes ($M=4.5$). This suggests that students perceive outdoor education as bringing additional educational value and stimulating their interest and engagement. Students have also expressed support for structured outdoor activities as it allows them to informally engage in the learning process and problem-solving across various subject areas ($M=4.2$). They believe that these activities provide opportunities to apply acquired knowledge in concrete situations related to nature, the community, culture, and the environment.

However, there are certain challenges and drawbacks identified in the research within the mentioned aspect. Students are less aware of the complementarity between classroom and outdoor education, which is reflected in their lower scores in terms of the success in acquiring instructional content in the classroom and active participation in teamwork ($M=2.8$). Furthermore, students have minimal interest in the learning process outside the classroom, as confirmed by research findings related to the clarity regarding instructional material after practical application ($M=2.7$) and the effectiveness in solving tasks in a natural environment ($M=2.2$). Based on the results, it can be concluded that there is a perception among students that it is necessary to align the School in Nature program with subject content and to directly connect outdoor education activities with the material taught in school. This highlights the need for synchronizing the curriculum and outdoor activities to ensure that the topics and objectives of both approaches coincide and complement each other.

Furthermore, the research results indicate insufficient awareness among students about the destination ($M=2.4$), which is an integral part of the School in Nature program and aims to shape their initial attitudes towards learning outside the classroom. These findings highlight the need to provide clear information to students about the purpose and objectives of such activities so that they can better understand the reasons for choosing a specific destination and how these activities can contribute to their learning. Additionally, the findings show that students express insufficient interest in acquiring basic knowledge of concepts directly related to educational tasks ($M=2.0$). This finding suggests that students are not motivated for independent learning or research related to these concepts. The lack of fundamental knowledge may limit their ability to fully understand and apply the subject matter covered in class.

2. School in Nature provides opportunities for social interactive learning: When it comes to the contribution of outdoor education, students have emphasized that they primarily associate its value with the development of positive social relationships ($M=4.2$). When students speak about the value of outdoor education in the context of social relationship development, it indicates their awareness that the outdoor environment provides space for peer interaction, connection, and the exchange of ideas. This interaction takes place in an environment that is less formal and structured compared to the classroom, which can encourage more open communication and the exchange of opinions. Through outdoor activities, students can work together to solve problems, challenges, and tasks, which promotes teamwork and mutual support. This type of collaboration can have a positive impact on the development of social skills, such as listening, communication, collaboration, negotiation, and conflict resolution. Students can get to know each other in a different way, creating stronger bonds and developing friendships. It is important to note that social interactive learning through outdoor education can have long-term benefits. Students gain experiences that can help them build positive relationships and communicate, not only in an educational context but also in everyday life. Understanding, empathy, teamwork, and the ability to collaborate with others are important skills that can be beneficial in many situations in students' lives.

3. School in Nature fosters environmental awareness in students and serves as a link between the nature and the classroom: Students emphasize that outdoor education helps connect different subjects and that concrete activities inspire them for further exploration ($M=4.1$). This is important because it encourages students to take a holistic approach to learning and understanding complex issues and phenomena that cannot be comprehensively grasped through individual subjects. Students believe that outdoor education particularly contributes to their understanding and mastery of the subject of Nature and

Society. Through practical activities and fieldwork, students have the opportunity to apply their knowledge from various fields in real-life situations. Additionally, students perceive specific outdoor education activities as a source of inspiration and motivation for further exploration of subjects and natural phenomena. These activities provide them with a chance to face real challenges and problems, and successfully overcoming these challenges allows them to feel motivated and confident, positively impacting their readiness for learning and exploration.

4. School in Nature provides students with opportunities for sports and recreational activities: Students have recognized the importance of sports and recreational activities in the outdoor education environment ($M=3.3$). These activities give students the chance to engage in teamwork, develop social skills, and gain experience in the practical application of what they have learned. Sports and recreational activities in the outdoor education environment offer students the opportunity to develop social skills. Through interaction with their peers during sports activities, students learn how to adapt to different roles, respect the rules of the game, resolve conflicts, and foster a sense of teamwork. These skills are not only valuable for sports but also hold broader societal significance as they help students integrate better within a group and establish positive relationships with others. The practical application of what is learned through sports and recreational activities is also a significant aspect. Students get the opportunity to apply theoretical knowledge they have acquired in the classroom to real-life situations. This enables them to understand the practical application of concepts and develop skills that will be useful in their daily lives. Sports and recreational activities in School in Nature significantly contribute to the social development of students by strengthening their teamwork skills, enhancing social interaction, and enabling the practical application of what they have learned. These activities promote a holistic approach to education, emphasizing the importance of physical health, supporting social integration, and allowing for the practical application of knowledge.

Students' opinions highlight the importance of establishing a better connection between classroom and outdoor education to provide clearer support and information to students regarding the objectives and content of outdoor education, aiming to stimulate greater interest and engagement in the learning process outside the classroom. The research findings on students' views on the importance of School in Nature indicate the significance of students being well-informed about the School in Nature program, their involvement in the planning and destination selection process, and the increase of their interest in fundamental knowledge directly related to educational tasks. Moreover, the way information is provided to students and how communication between teachers and students regarding outdoor education can be improved should be considered. To fully utilize the benefits of outdoor education, it is essential to encourage greater student interest, enable active participation, and ensure students' comprehension of the School in Nature program. The findings suggest that additional teacher training is necessary to effectively plan and carry out outdoor activities and their contributions to student learning and motivation.

The conclusion that can be drawn from the research results is that students recognize the value of outdoor education in the given aspects, particularly in the context of School in Nature. However, there are areas that require additional attention and improvement. The hypothesis that there is agreement between students' views on the contribution of outdoor education, specifically School in Nature, in different aspects of the education process, especially in the social and recreational sense, can be partially confirmed based on the research findings. The research findings suggest that there are indications of compliance between students' views on the contribution of outdoor education in various aspects of the educational process. However, this compliance can be considered strong or robust in the social aspect, while in other aspects, it is less pronounced or inadequately supported. Students express positive views regarding social interactive learning, emphasizing the development of positive social relationships and skills. Moreover, students' views indicate the positive impact of outdoor education on their interest, motivation, and ability to learn more. Additionally, students recognize the value of outdoor education in connecting different subjects and inspiring further exploration. However, although students acknowledge the importance of sports and recreational activities, the research findings indicate a less pronounced or less robust positive attitude regarding the recreational aspect of outdoor education.

The third research task aimed to investigate the differences in the opinions of teachers and students regarding the significance of outdoor education, using the example of the School in Nature. The attitudes of teachers and students were examined concerning organization, program planning, alignment of content, as well as their views on the educational and pedagogical effectiveness in the realms of the education process and the quality of the education process. Based on the obtained results, significant differences in the attitudes of teachers and students can be observed regarding the organization, planning, and alignment of program content in the School in Nature.

Teachers display high competence and readiness for conducting outdoor education, considering

that geographical, intellectual, and psychological preparation is necessary to provide a positive learning environment. In contrast, students show lower scores and less readiness for such preparation, indicating their insufficient interest and engagement in these aspects of outdoor education. Regarding the evaluation process after the activities in the School in Nature, students have a clear opinion about the necessity of such evaluation to assess the importance of outdoor education in achieving educational and pedagogical goals. On the other hand, teachers emphasize this aspect less, which may suggest their lower awareness of the significance of evaluation in the context of outdoor education. Additionally, differences in emphasizing the cognitive and affective domains in teaching processes are noted. Teachers emphasize the cognitive domain (knowledge acquisition) more, while students attach greater importance to the affective domain (attitudes, values, interests). This may indicate the need to adapt teaching methods and approaches to pay more attention to the emotional engagement of students. Regarding the pedagogical and educational significance of the School in Nature, teachers, more than students, recognize its value in students' academic achievements, in the correlation of content between subjects, and in the functionality of acquired knowledge. Furthermore, teachers emphasize the "innovation" in knowledge acquisition through outdoor education more than students, who show less interest in the learning process in that context. Regarding the pedagogical and educational efficiency, teachers emphasize the social and adventurous aspects of outdoor education, as well as the environmental aspect, more than students. The sports and recreational aspect is considered a powerful tool for preserving and enhancing students' health, with no significant differences between the attitudes of teachers and students. Students express the view of the "usefulness" of outdoor education, while teachers emphasize this aspect less. This may indicate different perspectives and expectations regarding the benefits that outdoor education provides to students.

The research findings have identified statistically significant differences in the opinions of teachers and students regarding the organization, planning, and evaluation of outdoor education. Teachers have shown higher competence and awareness of the importance of outdoor education in achieving educational and educational goals, while students have demonstrated less interest and engagement in these aspects. Differences were also noted in emphasizing the cognitive and affective domains and in evaluating the pedagogical and educational significance of the School in Nature. The research clearly confirms the hypothesis that teachers and students have significantly different views about the importance of outdoor education, especially the School in Nature, in achieving educational goals. Teachers particularly value preparation, the cognitive domain, and the complementarity between classroom and out-door education, while students emphasize the need for evaluation, the affective domain, and the social aspect of outdoor education. This points to the need for better understanding and communication between teachers and students to maximize the benefits of outdoor education.

The research results have shown that both teachers and students recognize the significance of outdoor education, particularly through the implementation of the School in Nature, in organizing educational activities within the teaching process, thus clearly confirming the main hypothesis. Teachers express a high level of support for this innovative teaching approach, acknowledging its positive effects in various aspects of education, such as students' social relationships, the organization of the teaching process, learning efficiency, and the connection with subjects. Their attitudes indicate competence and awareness of the importance of outdoor education in achieving educational and learning goals, emphasizing particularly the cognitive domain and the complementarity between classroom and outdoor education. On the other hand, students also recognize the value of outdoor education, but there are variations in their attitudes. The importance of social interactive learning, the development of positive social relationships and skills are particularly highlighted. Students also acknowledge the value in connecting different subjects and finding inspiration for further exploration. However, their support for the recreational aspect of outdoor education is less pronounced.

These findings highlight the importance of understanding the differences between teachers' and students' opinions to better adapt and improve outdoor education. The research also underscores the need for more effective communication between teachers and students to maximize the benefits of this innovative educational approach.

Conclusions

The essence of this study lies in the empirical approach to exploring the significance of outdoor education, using the example of School in Nature, from the perspective of both teachers and students, as an educational tool to connect students with concepts beyond the classroom. Teachers and students recognize numerous benefits of outdoor education, including educational, social, recreational, and

environmental dimensions. However, there are several challenges and shortcomings related to its implementation.

Teachers are more aware of the significance of outdoor education than students. They recognize various aspects of outdoor education and view it as a valuable tool to increase students' interest, motivation, and effective learning. Additional training for teachers is necessary to enable them to successfully plan and conduct outdoor activities. Teachers are aware of the need for professional development to enhance their skills and knowledge related to outdoor education. Continuous professional development for teachers should be supported to ensure the effective implementation of outdoor education.

Students have clearly expressed the view that outdoor education activities should be directly related to the curriculum taught in school. This highlights the need to integrate outdoor education into regular teaching materials to allow students to apply their acquired knowledge in practical situations. Teachers should devise ways to align outdoor education programs with the school curriculum to ensure their mutual complementarity and integration.

The pedagogical implications of this research include the need to support teachers through additional training, resources, and time for planning and conducting outdoor activities. It is also important to raise students' awareness of the significance of outdoor education and its benefits. Integrating outdoor education with regular teaching materials can enhance learning and the application of knowledge in practical situations.

Overall, outdoor education, such as School in Nature, represents an innovative approach that enhances educational and pedagogical efforts. The implementation of this type of education requires the support of educational systems, curricula, and continuous professional development for teachers. The pedagogical implications underscore the need for improving outdoor education to stimulate student interest, motivation, and successful learning.

These conclusions highlight the importance of further research and the enhancement of the organization and implementation of outdoor education to better meet the requirements and expectations of all participants in the education process.

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Conflict of interests

The authors declare no conflict of interest.

Author Contributions

Conceptualization, T.M.DJ., D.C., A.S.S., A.S; methodology, T.M.DJ., D.C., A.S.S., A.S; software, T.M.DJ.; formal analysis, T.M.DJ. and A.S.S.; writing—original draft preparation, T.M.DJ., D.C., A.S.S., A.S; writing—review and editing, T.M.DJ., D.C., A.S.S., A.S. All authors have read and agreed to the published version of the manuscript.

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