

Professional article

**INNOVATIVE APPLICATION OF THE OUTDOOR ACTIVITIES
PROGRAM - BIVOUC**

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Abstract. *The bivouac program, implemented over three days, provided a dynamic and multifaceted educational experience. It aimed to foster a deep connection with nature, enhance spatial awareness, and promote physical, emotional, and social development among participants. Day one focused on geographical and topographical orientation, utilizing interactive games to teach navigation and environmental interaction. These activities were more than just practical lessons; they deepened the participants' understanding of their surroundings. Day two's activities revolved around family involvement and teamwork. The "Joyful Olympics" incorporated various engaging exercises like sack races and cooking contests. These were designed not only for enjoyment but also to instill values of teamwork, family bonding, and responsibility towards nature. The day emphasized the importance of maintaining active and healthy lifestyles in a community setting. The program culminated with an expedition into Jelašnička Gorge, offering a practical application of the learned skills in a natural environment. This day combined physical challenges with ecological education, reinforcing concepts of biodiversity and conservation. In the end, recognition of individual and group accomplishments highlighted the themes of perseverance, skill mastery, and the value of community achievements. The bivouac program effectively merged educational content with active, participatory*

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learning. It demonstrated the significance of experiential outdoor education in developing comprehensive life skills. The program's success in enhancing participants' connection to the environment and community, as well as receiving positive feedback from all involved underlines its effectiveness as a model for contemporary education, catering to the holistic development of young individuals.

Key words: *outdoor education, environment, physical activity, physical education.*

1. INTRODUCTION

In an era dominated by rapid technological and urbanization advancements, the intrinsic connection between humans and nature often becomes overshadowed. This detachment has led to notable negative impacts on physical and psychological health, particularly among the youth. Recognizing this critical issue, outdoor activities have emerged as an essential component of educational systems worldwide, facilitating a deeper engagement of young individuals with their natural surroundings. These activities endorse a healthy and active lifestyle and cultivate a comprehensive awareness of environmental stewardship. A growing body of research, including works by Kahn Jr and Kellert (2002) and Taylor and Kuo (2006), underscores the significance of integrating nature into the educational and developmental processes of children and young adults.

Globally, the approach to outdoor education exhibits significant variation. Scandinavian countries, for instance, have long embedded outdoor learning into their educational ethos, while other regions are gradually acknowledging its importance. This diverse international landscape illustrates a burgeoning consensus on the benefits of nurturing a connection with nature from a young age. Such practices have been shown to foster creative thinking, enhance problem-solving abilities, and instill a robust sense of environmental responsibility (Kellert, 2018).

In addressing the gap between modern lifestyles and nature engagement, educational institutions in Serbia, particularly the faculties of Sport and Physical Education, have been proactive. Their programs, dating back to their establishment, intertwine physical fitness with outdoor activities, emphasizing a holistic approach to health and environmental awareness (Dabović et al., 2009). This blend of physical exertion and nature immersion is essential in counteracting the sedentary habits and indoor predilections prevalent today, as highlighted in Pellegrini's (2009) work. Recognizing the need for more structured and impactful outdoor experiences, the faculties have adopted the model of stationary camping or 'bivouacking' for primary school children, a three-day initiative. This approach aligns with the educational curriculum guidelines, which advocate for organized outdoor stays, such as trips, bivouacs, and camping, throughout multi-year schooling. Traditionally, these projects have been underutilized in schools despite their inclusion in the mandatory plan for regular physical education in both primary and secondary schools, reflecting their significant educational value, as Miletić (2011) noted.

Bivouacking, a planned, short-term, active stay in nature, offers high adaptability. Participants engage in pre-determined activities tailored to their environment and time constraints. Whether stationary or mobile, this method can be adjusted to meet different educational objectives. The concept, deeply rooted in outdoor education, provides a space for children and adults to experience nature in various forms—tents, makeshift shelters, or other temporary accommodations.

According to the 1975 encyclopedic definition (Flander et al., 1975) and further elaborations by Leskošek (1971), various forms and durations of camping underscore its versatility and adaptability. Bivouacking typically involves an organized, multi-day collective stay in nature (outside of inhabited areas) with accommodation in tents, huts, or improvised shelters, lasting up to five and, at most, seven days. Participants collaboratively equip and maintain the bivouac area with necessary facilities, water, and food, ensuring the group's vital functions (safety, nutrition, supply, hygiene, leisure activities, and other content) (Savić & Miletić, 2022).

The process involves the group's joint action, making it a collective endeavor organized by groups such as scouts, planners, researchers, hikers, students, tourists, and more—the fundamental difference between bivouacking and camping lies in the self-organized nature of life in the natural environment. Unlike typical tourist camping, where the participant is merely a "service user," bivouacking requires participants to actively contribute to the organization.

Savić and Miletić (2022) emphasize the organizational aspect and the collective experience in nature, highlighting the bivouac's pivotal role in fostering group dynamics and environmental appreciation. The bivouac, therefore, is not just an outdoor activity but a structured group effort that instills a sense of responsibility, teamwork, and a deeper connection with nature, making each participant feel like an integral part of the community.

This paper explores the incorporation of bivouacs into the educational system, examining their potential to cultivate well-rounded, conscientious, and healthy individuals. This approach addresses the youth's current challenges and aligns with evolving educational standards and policies, reinforcing the importance of active and immersive nature experiences in the modern educational landscape.

However, implementing effective outdoor education programs has challenges, including safety concerns, logistical complexities, and limited resources. Successful case studies provide blueprints for overcoming these obstacles, showcasing innovative and practical solutions that can be adapted in various contexts. Interestingly, integrating technology in outdoor education is bridging the gap between nature engagement and digital fluency. The use of technology and interactive educational apps for exploring nature exemplifies how digital tools can augment rather than replace outdoor experiences.

The theoretical underpinning of outdoor education draws upon frameworks like Kolb's experiential learning theory (Kolb, 2014) and Bandura's social learning theory (Bandura & Walters, 1977), which offer insight into the efficacy of learning through direct experience and observation in natural settings. Furthermore, the philosophies of natural pedagogy (Kahn Jr & Kellert, 2002) and ecological education (Palmer, 2002) emphasize individuals' holistic development through sustained interactions with nature.

The long-term impacts of engaging with the outdoors extend beyond immediate educational outcomes. Lifelong hobbies, career paths related to environmental sciences, and a persistent consciousness about ecological issues are often rooted in early experiences with nature. Current educational policies play a pivotal role in either facilitating or hindering the incorporation of outdoor activities into standard curricula. Understanding these policy dynamics is crucial for framing outdoor education within the broader global educational trends and challenges.

Therefore, outdoor activity programs have become increasingly significant in educating young individuals about modern challenges. These programs offer opportunities for physical activity, social and emotional skills development, and practical knowledge about nature and the environment. Research shows that such activities are vital for developing healthy lifestyles

and preventing obesity, anxiety, and depression (Bidzan-Bluma & Lipowska, 2018; Ratey, 2008).

In that regard, this paper aims to highlight the significance of outdoor activities in the educational context by analyzing and applying these theories and previous research. Programs like bivouacs, as potential parts of the educational system, offer a unique opportunity to develop holistic, conscious, and healthy individuals ready to face the challenges of the modern world.

2. METHODS

2.1. Program Overview

This paper focuses on a structured outdoor education program, a bivouac, conducted by the Serbian Sport and Physical Education faculties. The program is tailored for primary school students and aims to foster a connection with nature, enhance physical fitness, and develop social and environmental awareness.

2.1.1. Program Duration and Setting

The bivouac is a three-day program meticulously planned in line with the guidelines agreed upon by leading experts in the field: a nature stay of up to three days, organized educational activities with predefined outcomes, and a group stay in unconventional conditions, preferably conducted during summer.

2.1.2. Participant Selection

The program involved students from "Vožd Karađorđe" primary school in Niš and members of the Scout Unit attached to the same school, with a total of 30 participants. This number was chosen based on the standard class size as per Serbian educational law.

2.1.3. Location

The bivouac was held in the village of Brenica, 12 kilometers north of Niš, on the slopes of Kamenički Vis. The base camp was set up at the "Stevan Sindelić" primary school in the Brenica department.

2.1.4. Activity Schedule

The three-day bivouac program was thoughtfully designed to maximize the participants' engagement with nature and foster a sense of community (see Table 1). Upon arrival at the serene village of Brenica, participants were introduced to the natural beauty of the foothills of Kamenički Vis. The orientation activities on the first day provided an excellent opportunity for students to develop their navigational skills while exploring the environment.

World Parenting Day on the second day brought together students, their families, and local organization members for a memorable celebration. The "Joyful Olympics" allowed everyone to partake in competitive yet enjoyable games, enhancing the communal experience. The award ceremony recognized the children's efforts, adding a special touch to the day's accomplishments.

The final day's ecological excursion to Jelašnička Gorge was educational and adventurous. Participants learned about the unique endemic plant species of the region (*Ramonda serbica* and *Ramonda nathaliae*), enriching their understanding of local biodiversity. The mountaineering elements introduced a physical challenge, rewarding students with breathtaking views from Radov Kamen and Prozorac. Throughout the program, activities were designed to be enjoyable, instill an appreciation for nature, and promote participant teamwork and creativity.

Table 1 Bivouac Schedule

Day	Time	Activity
Day 1	14:00	Arrival and setup at base camp in Brenica
Day 1	16:00 - 19:00	Orientation activity in nature
Day 1	20:30 – 22:00	Lantern Night
Day 2	10:00 - 15:00	Joyful Olympics
Day 2	15:00 - 16:30	Communal lunch
Day 2	16:30 – 17:00	Award ceremony
Day 2	20:30 - 22:00	Campfire with songs plays, and dramatic presentations
Day 3	09:00 - 14:00	Guided hike through the village to Potkapina
Day 3	14:00 - 18:00	Mountaineering tour and ascent of Radov Kamen
Day 3	18:00 - 18:30	Return journey

2.2. Educational Objectives

The bivouac's primary goals were to enhance students' orientation skills, encourage active engagement in outdoor physical activities, and educate them about the local environment and its unique characteristics.

2.3. Innovation and Partnership

The program was designed to integrate theoretical and practical aspects covered in the faculty's curriculum. To align educational outcomes with real-world applications, collaboration was established with the "Vožd Karadorđe" primary school and the affiliated Scout Unit.

3. RESULTS AND DISCUSSION

The bivouac program, conducted by the Faculty of Sport and Physical Education, primary school "Vožd Karadorđe," and the affiliated Scout Unit represents a nuanced and robust approach to outdoor education. It seamlessly integrates practical experiences with theoretical insights. This comprehensive three-day program was a testament to the practical applications of geographic and topographical skills and a profound exercise in building community, environmental stewardship, and family bonds.

3.1. Integrating Diverse Educational Perspectives

The integration of geographical and topographical orientation in the bivouac program aligns with the systematic review by Bidzan-Bluma and Lipowska (2018), which emphasizes the multifaceted benefits of physical activities on children's cognitive development. These benefits extend beyond physical wellness, encompassing improved

concentration, enhanced problem-solving skills, and better academic performance, which are crucial in today's fast-paced educational environment. This practical application of orientation skills in a natural setting allows children to experience learning dynamically and hands-on, fostering a deeper understanding and retention of knowledge.

Kahn Jr and Kellert's (2002) work on the psychological, sociocultural, and evolutionary connections between children and nature adds a deeper dimension to this approach. Their research suggests that direct experiences with nature during childhood enhance sensory and emotional development and play a crucial role in shaping a child's character and values. By incorporating natural elements into the educational process, the bivouac program offered a unique opportunity for participants to develop a sense of respect and responsibility towards the environment, fostering sustainable behaviors from a young age.

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Moreover, these orientation activities transcended traditional educational methods, embracing a more holistic approach advocated in contemporary educational theories. This holistic approach, integrating physical, cognitive, and environmental aspects, is particularly relevant in our technology-driven era, where digital distractions are rampant. By engaging children in outdoor education, the program countered the sedentary lifestyle often associated with increased screen time, promoting a balanced development crucial for the modern child (Louv, 2008).

In essence, the bivouac program's approach to incorporating geographical and topographical orientation activities was not just an educational strategy but also a comprehensive developmental tool. It successfully merged theoretical knowledge with practical skills, fostering an all-rounded educational experience that resonates with current pedagogical trends. This integration of diverse educational perspectives (physical, cognitive, and environmental) underlines the importance of outdoor activities in fostering children's well-rounded development, preparing them not just academically but also as conscientious and engaged citizens of the world.

3.2. Incorporating Physical Culture and Environmental Education

Integrating physical culture in the bivouac program, echoing the principles outlined in Flander, Osterman, and Arlov's (1975) encyclopedia, highlights physical education's significant role in overall personal development. This source provides a rich historical and cultural context to physical education in Serbia, emphasizing its evolution and multifaceted nature. The program's design, which intertwines physical activities with environmental appreciation, aligns well with the contemporary focus on holistic education, as detailed in the works of educational theorists like Dewey and Piaget (Dewey, 1938; Piaget, 2005). In particular, Dewey advocated for experiential and interactive education, a concept reflected in the bivouac's activities.

Palmer's (2002) focus on environmental education adds depth to the program's structure. By combining physical activities with environmental care and sustainability lessons, the program fosters a sense of responsibility towards the natural world among participants. This approach aligns with the principles of outdoor education highlighted by Rickinson et al. (2004) in their comprehensive review of the impacts of outdoor learning experiences. They found that outdoor education significantly enhances personal and social development and fosters a connection with nature.

Furthermore, the bivouac program's efforts in embedding physical culture within an environmental context resonate with the concepts presented by Louv in "Last Child in the Woods" (2008), where he discusses the growing disconnection of children from nature in modern society. Louv's "Nature-Deficit Disorder" concept highlights the negative impact of a sedentary, technology-oriented lifestyle, reinforcing the need for programs like the bivouac to promote a more balanced development.

Fundamentally, the bivouac program's integration of physical culture and environmental education represents a comprehensive approach to learning supported by diverse educational theories and research. It exemplifies a model of education that aligns with the needs of the modern child, bridging the gap between traditional classroom settings and the dynamic outdoor environment. This approach, grounded in the principles advocated by literature, is a valuable blueprint for future educational programs aiming to cultivate physically fit, environmentally conscious, and culturally aware individuals.

3.3. Exploring Biophilic Design and the Role of Play

Applying Kellert's (2018) biophilic design principles in the bivouac program underscores the inherent value of integrating natural elements within learning environments. As detailed in "Nature by Design: The Practice of Biophilic Design," this approach emphasizes creating spaces that connect learners with nature, thereby enhancing their cognitive, emotional, and physical well-being. The program's use of natural settings as a backdrop for learning activities aligns with these principles, offering children an immersive experience that fosters a deeper connection with and appreciation for the natural world. This experience is consistent with the growing body of research supporting nature's role in enhancing creativity, as evidenced in Kellert et al. (2011) publication on environmental psychology and its implications for educational settings.

Pellegrini's (2009) exploration of play's role in human development provided a theoretical foundation for the bivouac's playful and exploratory activities. This approach is crucial in promoting social interaction, emotional development, and cognitive flexibility. The inclusion of play in the program's design aligns with the principles set forth by the National Association for the Education of Young Children (Copple & Bredekamp, 2009), which advocates for play-based learning as a key component in early childhood education.

Additionally, this integration of play within natural settings aligns with the "forest schools" and outdoor learning movement. This approach, gaining traction in Scandinavia and other parts of Europe, is explored in Knight's (2009) work on forest schools and outdoor learning environments. These educational models emphasize the benefits of unstructured play in natural settings, supporting the development of resilience, confidence, and independence among learners.

Therefore, the program's combination of biophilic design principles and play-based learning strategies represents a multifaceted approach to education, addressing children's physical, cognitive, and emotional needs comprehensively. This approach reflects a holistic educational philosophy that values experiential learning in diverse environments. By fostering children's innate biophilic tendencies alongside their playful nature, the program supports the development of well-rounded individuals who are academically proficient, emotionally intelligent, creative, and environmentally conscious.

3.4. Physical Activity and Nature Contact

In the bivouac program, physical activities in natural settings were not just exercises in physical health but also catalysts for cognitive enhancement and emotional resilience (Ratey, 2008). Ratey's work underscores the neurobiological benefits of physical exercise, particularly its role in improving cognitive function and mitigating stress, which are vital components in a child's development. The serene backdrop of Jelašnička Gorge further amplified these benefits through its tranquil and stimulating natural environment. Taylor and Kuo's (2006) research further support this program's approach, suggesting that regular exposure to nature significantly contributes to psychological well-being, reduced attention deficit symptoms, and better stress management in children. The program's design, incorporating nature-based activities, aligns with these findings, providing an environment where children can physically and mentally thrive.

Considering the broader spectrum of student responses, research by Stojanović et al. (2022) offers valuable comparative insights into how students' geographical backgrounds might influence their attitudes toward outdoor activities. This perspective is crucial for contextualizing our findings within the larger scope of outdoor education research and for tailoring future programs to diverse student populations.

Additionally, the hands-on experiences in Jelašnička Gorge may transform abstract environmental concepts into tangible learning experiences. This experiential learning method enhances understanding and retention of knowledge as students engage directly with the subject matter (Kolb, 2014). The physical exploration of Jelašnička Gorge makes environmental education more impactful, connecting students with real-world applications of ecological principles.

This experience in nature transcends traditional educational methods and fulfills the biophilic need outlined by Wilson (1986) in his biophilia hypothesis. Wilson argued that humans have an innate affinity towards nature, and satisfying this affinity is crucial for emotional and intellectual development. By embedding outdoor physical activities into the curriculum, the bivouac program nurtured a respect for the natural environment and instilled a sense of responsibility for its care and preservation.

3.5. Local Perspectives and Educational Practice

The contributions of Serbian educators and researchers are instrumental in shaping a localized approach to outdoor education that resonates with global pedagogical trends (Dabović et al., 2009; Leskošek, 1971; Savić & Miletić, 2022). The work of these scholars not only highlights the importance of physical culture and environmental education but also brings to light the unique challenges and opportunities within the Serbian educational system. Their insights emphasize the necessity of a curriculum responsive to society's evolving needs, where connection with nature and physical activity are integral components. Specifically, these scholars underscore the significance of educators as agents of change, advocating for a shift in teaching methodologies to encompass more outdoor and experiential learning opportunities. This perspective is crucial in an era where traditional classroom-based education often falls short in addressing the diverse learning needs of students. By incorporating outdoor activities, educators can offer more dynamic and engaging learning experiences that cater to different learning styles and foster a deeper understanding of environmental issues.

Furthermore, the emphasis on local cultural and natural heritage in these studies is pivotal. It highlights the importance of contextualizing education within the local environment, allowing students to develop a sense of place and identity rooted in their immediate surroundings. This approach fosters a connection with the local ecosystem and instills a sense of pride and responsibility toward preserving local natural and cultural heritage. Combining local perspectives with broader educational theories presents a comprehensive framework for outdoor education. It advocates for a balanced approach that harmonizes physical well-being, cognitive development, and environmental consciousness. This framework is essential for developing well-rounded, academically proficient, environmentally aware, and physically active individuals.

Integrating these local insights into educational practice presents a compelling model for outdoor education, particularly relevant to the Serbian context. It underlines the need for educational systems to evolve and adapt, ensuring that they remain relevant and effective in preparing students for the challenges of the 21st century. The collaboration between local and global educational perspectives offers a roadmap for future educational initiatives, aiming to cultivate a knowledgeable, environmentally conscious generation actively engaged with the world around them.

In addition, the innovative model of organizing the three-day bivouac presented in this paper illustrates a multifaceted approach to practical education, particularly in outdoor activities. This model provided students with ample material to overcome challenges in planning and executing such activities and emphasized thematic interconnectivity as a key factor for successful planning. The bivouac encompassed a blend of spatial orientation, diverse programmatic activities, and excursions, showcasing a method of practical instruction that prepares students effectively for future courses that follow theoretical and practical learning.

Our ambition to replicate this model under various temporal and spatial conditions during practical instruction reflects our commitment to versatile and comprehensive education. The plan emphasizes interdisciplinary connections, demonstrating to students the integration of physical education, recreation, anthropology, and other academic disciplines. Over three days, the program successfully achieved its intended outcomes, providing a holistic educational experience. This model advocates for the involvement of physical education teachers alongside educators in geography, biology, history, language, arts, and music. Such a multidisciplinary approach reinforces the concept that learning extends beyond the confines of a single discipline in primary and secondary education.

A key innovation of our planning approach was recognizing community needs and integrating them into our activities. We highlighted significant events such as “World Family Day” and initiatives like “In the Steps of Panta's Shoes” to promote the development of the World Scouting Movement, underscoring the importance of community engagement in educational activities. Partnering to implement the program represents an innovative approach to applying outdoor activities in education, aligning with Serbia's educational transformation from outcome-based to competence-based planning since 2018. This shift enables students to acquire functional knowledge applicable to real-life situations, moving beyond theoretical learning to apply acquired knowledge and habits in practical scenarios. Our innovative approach yielded significant positive effects for our partners, including a primary school and a scouting group. Following the initiative, the primary school incorporated excursions and bivouacs into its annual work program, while the scouting group experienced a notable

increase in membership. These achievements were spurred by active parental involvement and positive feedback shared at parent council meetings.

In the upcoming academic year, the Faculties of Sport and Physical Education plans to introduce new themes focusing on the practical application of activities in school planning, new activity models, and innovations in implementing the “Outdoor Activities” course. This comprehensive approach underscores the crucial role of unified efforts by parents, schools, and the state in fostering free and healthy citizens, a foundational element of democracy in our country. The success of this model lies in its ability to transcend traditional educational boundaries, fostering physical and cognitive skills, a profound connection with nature, community involvement, and holistic development.

4. CONCLUSION

The bivouac program exemplified a holistic educational approach, seamlessly blending theoretical learning with hands-on experiences. It began with teaching navigational skills through engaging activities, fostering spatial awareness and a deeper connection to nature. The second day emphasized family-oriented and team-building exercises, promoting collaboration, responsibility, and healthy living. The final day's hike through Jelašnička Gorge reinforced ecological knowledge and conservation awareness. The program concluded with a celebration of achievements, underscoring the importance of perseverance and communal success. Well-received by participants and educators alike, this approach highlights the value of integrating academic learning with physical, emotional, and social development, essential in forming well-rounded individuals prepared for contemporary challenges.

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INOVATIVNA PRIMENA PROGRAMA AKTIVNOSTI U PRIRODI – BIVAK

Program bivaka, koji je realizovan tokom tri dana, pružio je dinamično i višestruko obrazovno iskustvo. Imao je za cilj da podstakne duboku vezu sa prirodom, poboljša prostornu svest i promoviše fizički, emocionalni i društveni razvoj među učesnicima. Prvi dan je bio fokusiran na geografsku i topografsku orijentaciju, koristeći interaktivne igre za podučavanje navigacije i interakcije sa životnom sredinom. Ove aktivnosti su služile kao više od praktične lekcije; produbili su razumevanje učenika o svom okruženju. Aktivnosti drugog dana su bile bazirane na učešće porodice i timski rad. „Radosna Olimpijada“ je obuhvatala niz zanimljivih vežbi kao što su trke u vrećama i takmičenja u kuvanju. Ove igre su dizajnirane ne samo za uživanje, već i da usađuju vrednosti timskog rada, porodičnog povezivanja i odgovornosti prema prirodi. Dan je naglasio važnost održavanja aktivnog i zdravog načina života u okruženju zajednice. Program je kulminirao ekspedicijom u Jelašničkoj klisuri, nudeći praktičnu primenu naučenih veština u prirodnom okruženju. Ovaj dan je kombinovao fizičke izazove sa ekološkim obrazovanjem, jačajući koncepte biodiverziteta i očuvanja. Priznavanje individualnih i grupnih dostignuća na kraju je istaklo teme istrajnosti, ovladavanja veštinama i vrednosti dostignuća zajednice. Sve u svemu, program bivaka je efektivno spojio obrazovni sadržaj sa aktivnim učenjem uz učešće. Pokazao je značaj iskustvenog obrazovanja na otvorenom u razvoju sveobuhvatnih životnih veština. Uspех programa u jačanju povezanosti učesnika sa životnom sredinom i zajednicom, kao i u dobijanju pozitivnih povratnih informacija od svih učesnika, naglašava njegovu delotvornost kao modela za savremeno obrazovanje, koji se brine za holistički razvoj mladih pojedinaca.

Ključne reči: *nastava u prirodi, životna sredina, fizička aktivnost, fizičko vaspitanje.*