

Review

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An Examination of The Impacts Of Outdoor Education Programs

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Abstract: The review of the outcomes in this field primarily reveals factors that have impacted outdoor education programs and other relevant historical research is included. The objectives of this review are to elaborate on the outcomes of the outdoor education programs for students' personal development. The review shows the outcomes of outdoor education programs included definitions, philosophy, pedagogy, outcomes, and future perspective of outdoor education has existed as a recognized subject of study in programs but using outdoor experiences and activities as part of programs. In summary, the evidence of the results obtained by the participants in the outdoor education program has a positive impact on their personality development, and all programs that utilize the concept of outdoor education programs based on the information presented can have an impact on participants and operators of outdoor education programs. The implications of these findings can provide a clear picture for researchers in the field of outdoor education in conducting empirical studies to prove that outdoor education programs are one of the most comprehensive programs in fostering individual positive impacts and developing the good character of humans.

Keywords: Outdoor education; Philosophy; Pedagogy; Outcomes

Introduction

Over the past two decades, research has consistently highlighted the positive impacts of outdoor education programs on various aspects of personal and social development, physical activity, academic performance, and leadership skills

across diverse participant groups and age ranges. As educational curricula continue to evolve, the role and significance of outdoor education may also shift, necessitating a deeper understanding of its current scope and application in schools. This understanding is crucial to guide curriculum decision-makers—such as



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universities, education departments, school leaders, and teachers—toward making informed choices about the future direction of this discipline. This paper examines the documented outcomes of outdoor education programs as reported in existing literature. It identifies gaps requiring further investigation to provide a more comprehensive understanding of how educators and program designers utilize outdoor education to meet learning objectives. A lack of consensus on the definition and role of outdoor education within the curriculum remains a widely noted issue (Georgakis & Light, 2010; Lugg & Martin, 2001; Polley & Pickett, 2003). While the primary focus of this review is outdoor education as a subject, it also considers related topics such as outdoor recreation and the pedagogical approaches used in outdoor learning contexts.

Outdoor education is fun and challenging, because of its characteristics, at the same time it is an experiential way of education that attracts a large number of young students to participate (Samsudin, 2021). In general, outdoor education can be described as teaching and/or learning and/or experience in an outdoor and/or out-of-school environment (McGowan, A. L. 2016). However, there are limited studies examining the effectiveness of such programs (Enoksen & Lynch, 2018; Vikene et al., 2019), and no comprehensive studies describing the impact of outdoor education on the students have been found. Therefore, this study aims to review the research on the impact of outdoor education programs among students, to determine the factors of outdoor education which can effectively improve students' personal development. Promoting the development of outdoor education while contributing to the sustainable development of outdoor education.

1. Definitions of Outdoor Education

Priest (1986) described outdoor education as a form of experiential learning that can occur in both indoor and outdoor environments, promoting lifelong learning and influenced by educational thinkers like Rousseau, Pestalozzi, Comenius, and Dewey. Hammerman (2001) viewed it as a contemporary curriculum innovation, though its exact definition often remains ambiguous. Neill (2003) characterized outdoor education as involving small groups participating in organized, adventure-based activities in natural settings, with an emphasis on self-reliance for problem-solving. In

2008, Neill further highlighted its role in fostering environmental stewardship and responsibility.

McGowan (2016) emphasized the immersive, sensory-driven nature of outdoor education, which challenges participants to overcome obstacles, achieve success, and develop mastery. This educational approach often includes both adventure education and environmental education. While environmental education focuses on human-ecosystem relationships, aiming to enhance environmental awareness and address ecological challenges, adventure education prioritizes the development of personal and social skills (Povilaitis, 2019).

The concept of outdoor education reflects a complex and holistic pedagogical framework. It has been described as a process of experiential learning (Priest, 1986), a method for teaching (Hammerman et al., 2001), and a tool for problem-solving (Neill, 2008). These varied perspectives contribute to the challenge of defining outdoor education. Scholars suggest adopting a broad definition, recognizing that its meaning is shaped by evolving societal contexts and should remain flexible across different times, cultures, and environments.

2. Philosophy of Outdoor Education

Outdoor education is increasingly recognized both as a teaching strategy and as a distinct subject, integrating three core areas: outdoor activities, environmental education, and personal and social development (Higgins, 1997). As the field evolved, its definitions and concepts expanded significantly. During the 1940s and 1950s, contrasting perspectives on outdoor education emerged through the work of L.B. Sharp and Julian Smith. Sharp emphasized the importance of hands-on activities that foster a deeper understanding of the natural environment as a means to achieve educational objectives. Conversely, Smith (1995) focused on developing practical skills that could be effectively applied in everyday life. Despite their differing approaches, both shared a common goal: to help students gain greater self-awareness and a deeper understanding of the world around them by engaging with outdoor experiences (Aspenson, 2010).

Priest (1986) used the metaphor of a tree to represent outdoor education. The trunk symbolizes the core concept, branching into two primary areas: adventure

education and environmental education. Each branch extends into a canopy of leaves, representing the experiential learning process. The "soil" beneath the tree nourishes it, comprising the six senses and three domains of learning. This experiential process draws from these elements and cycles processed knowledge back into the roots for storage, much like a tree's natural growth cycle. The philosophies underpinning outdoor education share key objectives: fostering a deeper appreciation for nature and our connection to it (Aspenson, 2010), and promoting personal growth through collaboration with others and responsible engagement with the natural world (Pryor, Carpenter, & Townsend, 2005). Priest (1986)

expanded on this by emphasizing the multifaceted relationships central to outdoor education, including interpersonal, intrapersonal, eco-systemic, and ecological connections. These relationships highlight interactions among individuals, self-reflection, and human connections with the environment.

Over time, outdoor education has come to be seen as a lifelong learning journey, shaping our relationships with others, ourselves, and the natural world. However, as Nicol (2014) observed, the philosophy has grown more "middle-aged" and conservative, increasingly influenced by and reactive to funding sources, which has, in part, guided its vision and priorities.

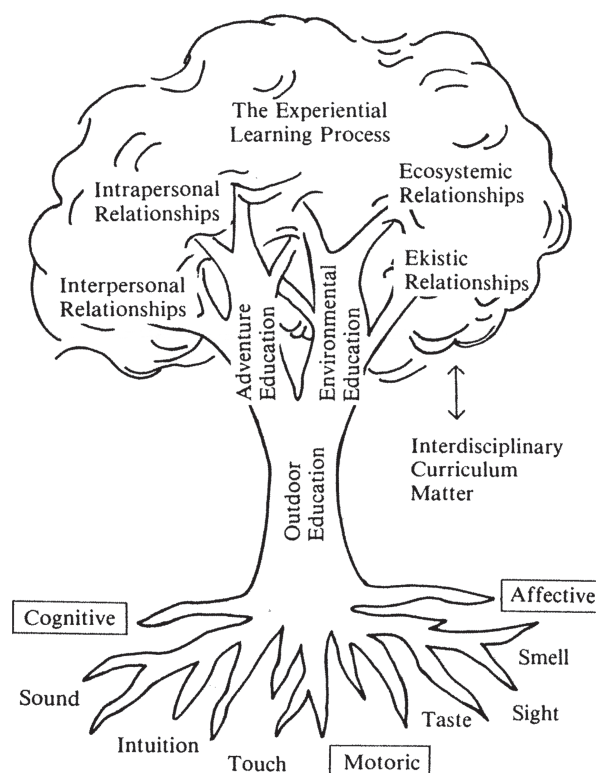


Figure 1: Outdoor education tree

3. Pedagogy of Outdoor Education Program

Purpose

The purpose of an outdoor education program is should develop the potential of the individual thoroughly and effectively. Outdoor education should produce holistic individuals through balanced mental, physical and mental development (Priest, 1999). The objective of outdoor education is also tough with the National Education Philosophy which is to create a balanced,

physical, emotional, spiritual, intellectual, and social person (Md Amin, 2011). Psychomotor domains in outdoor education can develop the physical fitness of the person to be healthy, fit, and competitive to surely have stable emotions and able to make wise decisions in their daily lives (Neill, 2008). Individuals will also be strengthened with high spiritual values to maintain their well-being, the community, and the environment, also the combination of these domains can create a harmonious and prosperous society

(Priest, 1999). Outdoor education programs offer participants a unique opportunity to grow and learn in a nontraditional classroom and the objectives that need to be ineffective outdoor education programs namely psychomotor, affective, cognitive, spiritual, and social (Povilaitis, 2019). The teacher Education Conceptual Model (TED) has also suppressed some aspects in contributing to the three dimensions of a teacher's life; God, Self, and Society. This is balanced against the learning outcomes involving three learning domains such as knowledge, skill, and value to the core physical, spiritual, intellectual, and emotional. Outdoor education programs conducted at Higher Education Institutions are also much influenced by previous education programs conducted earlier. All the details of the purpose of the program greatly suppress the theories and philosophies expressed by certain bodies. Outdoor Education Program aims are diverse, including learning basic outdoor survival skills, general problem solving, enhancing teamwork developing leadership skills (Annesi, 2020).

The program will expose students to the elements that will foster mental and emotional education, cooperation, leadership, problem-solving in a critical situation, and a lot of concentration on personality. In preparing high-quality Physical Education teachers and producing responsible Outdoor education leaders, the program has set five objectives to achieve; the goal of mastering teaching and learning skills, planning lessons, planning activities, conducting activities, and evaluating the effectiveness of implementation.

Learning Prospects

Outdoor education is a curriculum styling, where the learning process takes place outside of the classroom and encompasses environmental, conservation, challenging, camping, and natural therapies by engaging active interactions between facilitators, students, and learning materials (Leppain, 2000). This can be distinguished by classroom learning has been a habit since thirty years ago and all the goals and objectives to made a positive effect on the participants failed to achieve. While the learning process in experience learning takes on a hands-on, lasting effect and can be practiced in everyday life. The learning process in outdoor education should also be unique because it is rich in philosophy, metaphor, behavior,

and verities of goals for participants (Davidson, 2001). The hands-on learning experience is processed through a guide implemented by the facilitator and encourages the formation of new ideas and knowledge (Beard & Wilson, 2002). This hands-on learning process has been evident in achieving self-directed goals, social goals, education, rehabilitation, and environment (Neill, 2003). There has been growing support for youth engagement in various organized outdoor activities with educational designs that promote positive psychosocial development (McGowan, 2016; Chapman, 2017; Ros, 2018; Eigenschenk, 2019; Sprague, 2020). This new idea and knowledge are reinforced with the facilitator's guidance and the final group cohesion can be practiced in everyday life.

In outdoor education learning experience is often carried out through three main program forms namely camping, expedition, and daily activity or travel (Thomas & Thomas, 2000). Therefore, the implementation of camping programs that are equipped with leisure activities, group training, expeditions, and scientific tours are often organized including outdoor education programs at Higher Education Institutions. In the camping program, participants will be exposed to various challenges and experiences in nature that involve the learning process through experiential learning methods (Thomas & Thomas, 2000). Expeditions intended for outdoor education are activities from one location to another location to meet the goals of the program. The main objective of this activity is to promote individual holistic learning and development processes through challenges in different environments (Neill, 2008). Activities or excursions in natural areas, museums, and within the school area are also outdoor education program because is implemented to provide an alternative learning environment to classroom learning (Neill, 2003). Assignments or activities organized for participants will test the participants to plan, evaluate, take risks and make decisions before they carry out the activity with the help of an indicator of the teaching and also the skills taught in a program.

Focus

A focused program is a cornerstone of outdoor education, aiming to cultivate holistic individual development, equip participants with diverse skills,

and nurture their passion for nature (Bunting, 2006). According to Gilbertson, Bates, McLaughlin, and Ewert (2006), outdoor education integrates three key components: personal and social development, outdoor pursuits, and environmental education or studies. This combination is fundamental, as it maximizes individual potential while aligning with the objectives of the National Education Philosophy. The personal and social development aspect emphasizes enhancing the holistic potential of individuals and groups (Samsudin & Kamalden, 2021). It fosters qualities such as responsibility, respect, self-confidence, and a sense of achievement. This focus engages affective, behavioral, and cognitive domains to support comprehensive personal growth.

The outdoor pursuit, or adventure education component, combines risk, challenges, and outdoor skills to create dynamic and engaging learning experiences. By incorporating elements of risk, fun, success, and failure, this approach encourages active participation, self-awareness, and meaningful learning opportunities (Wood, 2023). Such experiences motivate participants to strive for success while enriching their educational journey (Bunting, 2006). Finally, the environmental education dimension positions outdoor education as a platform for cultivating environmental awareness and attitudes. By immersing participants in natural settings, it fosters a deeper connection to and respect for the environment, further reinforcing the holistic objectives of outdoor education.

Characteristics of Activity

The unique activities are a key component of the success of the outdoor education program and are often implemented in nature, involving group work and learning processes based on learning methods (McGowan, 2016). Nature is a very important resource in implementing outdoor education programs and the facilitators' help enables its objectives to succeed (Leirhaug, 2020). Outdoor education learning based on findings inquiry is strongly encouraged as a means of teaching students to use their minds to control their emotions and conduct movement in any new situation (Fang, 2021). Furthermore, students are also exposed to planned risk elements and face challenges, success, and failure during activities. Young people are often the target population for

outdoor education programs because they are prime years for development in a variety of domains, many evaluations of outdoor education programs have focused on participant outcomes (Povilaitis, 2019). Managing students' physical safety and activity risk is the first characteristic of an outdoor education program (Sharpe, 2005; Schumann, 2009). Unique features in the activities of outdoor education are an interesting subject from other subjects. The combination of characteristics in the outdoor education activities such as nature, group work, direct experience, risks and challenges, excitement, success and failure, active involvement, and guidance. This combination is proven to be effective in enriching the learning experience and developing individual holistic potential. Effective and good outdoor education programs should examine each of these features in planning the implementation of the program (Samsudin, 2021). This is to give students the long-term benefits and impacts so that the knowledge and knowledge gained will help them in their lives.

4. Outcomes of Outdoor Education Program

The origins of outdoor education programs can be traced back to ancient times, as early as the teachings of Plato. However, outdoor education research is still relatively young, having emerged only in the 1950s (Laidlaw, 2000). Over time, the focus of research has shifted from documenting the foundational principles of outdoor education to investigating the effects these programs have on participants. Outdoor education models (OEMs) are intentionally designed to promote critical educational outcomes and practical skills. As a result, research has explored their impact on various aspects of psychosocial development, particularly on psychological constructs such as self-concept, leadership, and communication skills (Eigenschenk, 2019; McGowan, 2016; Rose, 2018). The following examples illustrate these impacts:

Cooperative Teamwork

An effective outdoor education program requires carefully planned and prepared activities led by skilled personnel and teachers who utilize the environment, nature, and hands-on experiences as integral elements of teaching and learning (Harun, 2010). One of the key outcomes of such programs is the development of cooperative teamwork (Purc-Stephenson, 2019). Teamwork has been defined in various ways, often

associated with interpersonal acceptance, mutual support, and trust among group members (Soares, 2010). Cohesion, a critical aspect of teamwork, has been widely studied across multiple disciplines, including sociology, social psychology, counseling, military and organizational psychology, educational settings, and sports psychology (Carron & Brawley, 2000). Adventure education programs frequently aim to foster teamwork and cooperation, helping students build essential competencies (Anderson, 2020).

Teamwork is inherently dynamic and evolves throughout the stages of group formation, development, maintenance, and dissolution (Carron, 2007). It involves two key dimensions: instrumental and affective. While the instrumental dimension pertains to the group's functional goals, the affective dimension refers to the social bonds that hold the group together. Weaknesses in the affective dimension can lead to inconsistencies in group dynamics, potentially resulting in group disbandment (Carron, 2007). Research has shown a strong correlation between outdoor education programs and enhanced cooperation among participants (Harun & Salamuddin, 2010). This evidence underscores the significance of cooperative teamwork as a vital outcome of outdoor education initiatives.

Leadership Ability

Leadership is often defined as the process by which an individual influences a group to achieve a shared goal (Northouse, 2001). Similarly, Kouzes and Posner (2009) describe leadership as the art of inspiring people to work toward a common vision. Nissinen (2001) emphasizes that leadership effectiveness is rooted in the personal potential of the leader, shaped by situational factors, the operational environment, and the objectives of the activity. Yukl (2013) further describes leadership as the intentional effort to guide individuals or groups toward goals they could not achieve alone. Research highlights the importance of interpersonal skills in leadership within outdoor education settings. Leadership development within these programs has also been shown to promote significant personal growth and improved competencies, as feedback from teachers and real-world experiences in nature facilitate substantial progress in perceived leadership skills (Vigane, 2022). Adventure programs, in particular, have demonstrated a notable impact on fostering leadership abilities

(Anderson, 2020).

Additionally, Baxter Magolda (2008) underscores the importance of self-awareness in leadership, advocating for individuals to "listen to their inner voice" to take charge of their lives and make proactive decisions. The research collectively highlights a strong connection between outdoor education programs and leadership development, illustrating how these experiences nurture essential leadership qualities and prepare participants for future challenges.

Self-confidence

Self-confidence plays a crucial role in supporting the educational process, as it reflects an individual's belief in their ability to achieve specific goals (Listiandi, 2021). In the context of outdoor education, self-confidence is often cited as one of the key long-term benefits. Prince (2021) notes that outdoor adventure residential programs are particularly effective in fostering lasting outcomes such as increased self-confidence and personal development. This attribute, along with teamwork, life skills, and interpersonal abilities, is valuable not only during the program but also later in life as participants take on new opportunities and challenges. Neill (2003) observed that while outdoor education programs typically have a modest effect on participants' personal traits, they are effective in enhancing self-confidence by creating situations where individuals can experience a sense of achievement.

Several studies support the positive impact of outdoor education on self-confidence. Harun (2010) found a significant correlation between outdoor education programs and increased self-confidence, while Mirrahi (2011) suggested that the natural environment plays a key role in boosting confidence, improving problem-solving abilities, and inspiring learning. This aligns with the findings of the Learning Away program (Kendall & Rodger, 2015), where confidence was a major outcome, as well as Crosbie's (2014) study of outdoor adventure programs for people with disabilities, where confidence emerged as a primary long-term benefit. Additionally, research on camping programs has shown a positive effect on self-confidence (Listiandi, 2021), and personal factors associated with outdoor education practices are shown to significantly influence confidence levels

(Jidovtseff et al., 2021). Silva (2022) also demonstrated a clear increase in self-confidence from pre- to post-intervention in outdoor education programs. Collectively, these studies affirm the beneficial impact of outdoor education on participants' self-confidence.

Self-efficacy

Self-efficacy, often described as situational self-confidence, refers to an individual's belief in their ability to perform specific actions to achieve desired outcomes (Propst & Koesler, 1998). It is strongly associated with psychological well-being, health, and persistence (Bunting, 2006). Outdoor education programs are recognized for fostering self-efficacy through mastery experiences, vicarious learning, and verbal encouragement, all of which are integral to wilderness settings (Lokos, 2013). Participants learn by reflecting on their own successes and failures and observing those of others in socially constructed learning environments (Reed, 2023). These structured activities, guided by outdoor educators, ensure that gains are rooted in the understanding and accomplishment of specific lessons rather than the mere outdoor context (Lokos et al., 2013).

In educational contexts, self-efficacy plays a key role. For example, "teacher self-efficacy" reflects a teacher's confidence in their ability to teach particular skills or concepts (Dellinger et al., 2008; Loreman et al., 2013). Outdoor education programs have been shown to enhance the self-efficacy of physical education teacher trainees, equipping them with skills to teach outdoor education effectively (Hovey et al., 2020). However, researchers caution against inflated self-efficacy, which may lead to risky behavior and reduced performance (Schmidt & DeShon, 2009). Strategies such as offering balanced opportunities for success and failure, contextually relevant skill instruction, and metacognitive interventions can mitigate such risks (Schumann, 2013). By incorporating both planned and spontaneous activities, outdoor education programs provide a dynamic platform for building self-efficacy (Fang, 2021). These findings affirm the vital role of outdoor education in fostering self-efficacy development.

Life Effectiveness

Life effectiveness refers to individuals' perception of their ability to perform essential tasks for success in

life (Neill et al., 2003). It is often assessed in outdoor education settings as a multidimensional construct that provides insights into participants' development (Sibthorp & Arthur-Banning, 2004; Lane, 2008). Studies have highlighted significant improvements in life effectiveness through participation in outdoor programs. For instance, Dougherty (2005) found that participants in the *"Becoming an Outdoors-Woman"* program experienced notable gains in life effectiveness after challenge course activities. Similarly, Lane (2008) observed improvements in social competence and emotional control among participants in adventure camps, while Frauman and Waryold (2009) reported enhanced life effectiveness in college students after wilderness orientation programs.

Outdoor education is also shown to develop broader life skills and social effectiveness (Gray, 2018). Activities such as outdoor sports foster social connectedness by creating opportunities for interaction and relationship-building (Eigenschenk et al., 2019). Thomas (2019) confirmed that outdoor programs positively influence students' perceptions of their life skills. However, measuring life effectiveness consistently can be challenging due to variables such as participant age, program length, and structure. Despite these challenges, research indicates that life effectiveness is shaped by individuals' capacity to achieve their potential, underscoring the transformative impact of outdoor education experiences.

Locus of Control

An internal locus of control (LOC) orientation is associated with better psychological health, as individuals with this mindset tend to be less anxious, aggressive, and authoritarian (Anderson et al., 2020). LOC, closely linked to self-efficacy, reflects how individuals attribute the outcomes of their actions to their own behaviors or external factors (Hans, 2000; Panwar & Gorsy, 2016). It signifies the degree to which a person believes they have control over events in their life (Samsudin, 2021). Adventure programs are designed to foster a more internal LOC by connecting participants' actions with immediate consequences and providing realistic feedback, thereby promoting a sense of control over their environment (Hans, 2000). Longer program durations have been found to result in a more pronounced shift toward an internal LOC compared to

shorter programs.

The development of an internal LOC is further supported by constructive-development pedagogy, which encourages participants to take responsibility for their actions by learning from natural consequences (Baxter Magolda, 2004). Studies also highlight that adventure programs significantly enhance internality as measured through LOC assessments (Smith & Thomas, 2021). Participants with an internal LOC orientation are more likely to take active control of their development and environment, demonstrating the transformative potential of outdoor education in shaping personal responsibility and self-regulation. These findings affirm that locus of control is a measurable and significant outcome of outdoor education experiences.

5. Future Perspective

Education is a cornerstone of human life, with national education systems aimed at nurturing students to become well-rounded, noble individuals who are healthy, knowledgeable, creative, independent, democratic, and responsible (Listiandi, 2021). While digital learning is increasingly emphasized for its role in preparing society for future career challenges, a contrasting educational approach is gaining traction—one that encourages disconnection from technology and immersion in nature. Outdoor education, often referred to as adventure or experiential learning, encompasses a variety of structured activities in natural settings, aiming to foster personal growth, societal well-being, and sustainable environmental practices (Prince et al., 2022). This form of education typically involves experiential and journey-based learning, presenting participants with memorable challenges and opportunities to develop personal and social skills (Smith & Thomas, 2021). Notably, outdoor soft adventurers have expressed moderate life satisfaction and high optimism about the future (Próchniak, 2022).

Outdoor education programs are celebrated for enhancing intrapersonal and interpersonal skills, promoting social interactions, and fostering mutual respect (Gibbons et al., 2010). The novelty of activities, unique teaching methods, and participants' enjoyment significantly contribute to these outcomes. The experience often disrupts traditional social norms, breaking down barriers, encouraging inclusion, and reshaping perceptions within groups. As outdoor

education evolves, advancements in technology and pedagogy are expected to enrich the programs further, expanding their reach and diversity. Adventure-based physical education, for instance, is gaining recognition as an engaging alternative to traditional fitness activities, incorporating elements such as endurance, strength, flexibility, balance, and coordination. The ever-expanding scope of outdoor education highlights its dynamic role in preparing individuals for a balanced and fulfilling life.

Conclusion

A review of this paper elaborated on the pedagogy of outdoor education programs. This is done to provide students with long-term benefits and impacts so that the knowledge and knowledge gained will be useful to them in their lives. And summarized the many outcomes obtained from outdoor education programs from previous researchers, such as cooperative teamwork, leadership ability, self-confidence, self-efficacy, life effectiveness, and locus of control. Based on this review, the evidence the results obtained by the participants in the outdoor education program have a positive impact on their personality development. In addition, all programs that utilize the concept of outdoor education programs based on the information presented can have an impact on participants and operators of outdoor education programs. The implications of these findings can provide a clear picture for researchers in the field of outdoor education in conducting empirical studies to prove that outdoor education program is one of the most comprehensive programs in fostering individual positive impacts and developing the good character of humans.

Reference

- [1] Anderson, K. R., Zwart, R., & Ewert, A. (2020). A Comparison of Transferable Skill Development in Both Experiential Leadership Curriculums and Traditional Leadership Curriculums. *Journal of Outdoor Recreation, Education, and Leadership*, 12(2).
- [2] Annesi, J. J. (2020). Effects of a teen resident camp leadership program on changes in dimensions of self-control and interpersonal functioning, and their theory-based relationships. *Evaluation and Program Planning*, 78, 101745.

- <https://doi.org/10.1016/j.evalprogplan.2019.101745>
- [3] Aspenson, J. L. (2010). *The influence of outdoor education to improve the quality of life for individuals with dementia thesis*. (Master Thesis), University of Minnesota, Duluth.
- [4] Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84, 191–215. PubMed ID: 847061. doi:10.1037/0033-295X.84.2.191
- [5] Baxter Magolda, M. B. (2008). Three elements of self-authorship. *Journal of College Student Development*, 49(4), 269–284.
- [6] Bisson, C., & Luckner, J. (1996). Fun in Learning: The Pedagogical Role of Fun in Adventure Education. *Journal of Experiential Education*, 19(2), 108–112.
- [7] Booth, J. W., & Neill, J. T. (2017). Coping strategies and the development of psychological resilience. *Journal of Outdoor and Environmental Education*, 20, 47–54.
- [8] Bunting, C. J. (2006). *Interdisciplinary teaching through outdoor education*. Champaign: Human Kinetics.
- [9] Carlson, J. A. (2002). *Lloyd Burgess Sharp: An oral history of a career that shaped outdoor education* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database.
- [10] Carron, A. V., & Brawley, L. R. (2000). Cohesion: Conceptual and measurement issues. *Small Group Research*, 31(1), 89–106.
- [11] Chapman, C. M., Deane, K. L., Harre, N., Courtney, M. G., & Moore, J. (2017). Engagement and mentor support as drivers of social development in the project K youth development program. *Journal of Youth and Adolescence*, 46(3), 644–655.
<https://doi.org/10.1007/s10964-017-0640-5>
- [12] Crosbie, J. P. G. (2014). *The value of outdoor education for people with disabilities: An in-depth case study of the Calvert Trust (Unpublished doctoral dissertation)*. University of Edinburgh, U.K
- [13] Culhane, J. D. (2004). *The Effects of a Fifth Grade Adventure-based Cooperative Physical Education Program on Life Effectiveness and Locus of Control* (Doctoral dissertation). Available from ProQuest Dissertations and Theses Database.
- [14] Dellinger, A.B., Bobbett, J.J., Olivier, D.F., & Ellett, C.D. (2008). Measuring teachers' self-efficacy beliefs: Development and use of the TEBS-Self. *Teaching and Teacher Education*, 24, 751–766. doi:10.1016/j.tate.2007.02.010
- [15] Donaldson, G. E., & Donaldson, L. E. (1958). Outdoor education: A definition. *Journal of Health, Physical Education and Recreation*, 29(17), 63–76.
- [16] Dougherty, M. A. (2005). *The changes in life effectiveness following ropes course participation for Becoming an Outdoors-Woman (BOW) participants* (Doctoral dissertation). Available from ProQuest Dissertations and Theses Database. *Education and Outdoor Learning*, 18(2), 176188.
<https://doi.org/10.1080/14729679.2017.1391105>
- [17] Eigenschenk, B., Thomann, A., McClure, M., Davies, L., Gregory, M., Dettweiler, U., & Ingles, E. (2019). Benefits of outdoor sports for society: A systematic literature review and reflections on evidence. *International Journal of Environmental Research and Public Health*, 16(6), 937.
<https://doi.org/10.3390/ijerph16060937>
- [18] Enoksen, E., & Lynch, P. (2018). Learning leadership: Becoming an outdoor leader. *Journal of Adventure*
- [19] Fernández-Río, J., & Suarez, C. (2016). Feasibility and students' preliminary views on parkour in a group of primary school children. *Physical Education and Sport Pedagogy*, 21(3), 281–294.
- [20] Fletcher, D., & Fletcher, J. (2005). A meta-model of stress, emotions and performance: Conceptual foundations, theoretical framework, and research directions [Abstract]. *Journal of Sports Sciences*, 23, 157–158.
- [21] Fletcher, D., & Scott, M. (2010). Psychological stress in sports coaches: A review of concepts, theory and research. *Journal of Sports Sciences*, 28, 127–137.
- [22] Fletcher, D., Hanton, S., & Mellalieu, S. D. (2006). An organizational stress review: Conceptual and theoretical issues in competitive sport. In S. Hanton, & S. D. Mellalieu (Eds.). *Literature Reviews in Sport Psychology* (321–374). Hauppauge, NY: Nova Science.
- [23] Frauman, E., & Waryold, D. (2009). Impact of a wilderness orientation program on college

- student's life effectiveness. *Journal of Outdoor Recreation, Education, and Leadership*, 1(2), 189-207.
- [24] Gilbertson, K. (2006). Outdoor education: Methods and strategies: Human Kinetics. Gilbertson, K., Bates, T., McLaughlin, T. & Ewert, A. (2006). Outdoor Education: Methods and strategies. Illinois: human Kinetics
- [25] Gray, T. (2018). Outdoor learning: Not new, just newly important. *Curriculum Perspectives*, 38(2), 145-149.
- [26] Hammerman, D., Hammerman, W., & Hammerman, E. (2001). *Teaching in the outdoors* (5th Ed.). Illinois: Interstate Publishers Inc.
- [27] Hans, T. A. (2000). A meta-analysis of the effects of adventure programming on locus of control. *Journal of Contemporary Psychotherapy*, 30(1), 33-60.
- [28] Harun, M. T., & Salamuddin, N. (2010). Cultivating personality development through outdoor education programme: the Malaysia experience. *Procedia-Social and Behavioral Sciences*, 9, 228-234.
- [29] Harun, M. T., & Salamuddin, N. (2010). Cultivating personality development through outdoor education program: the Malaysia experience. *Procedia-Social and Behavioral Sciences*, 9, 228-234.
- [30] Higgins, P., & Loynes, C. (1997). Toward consensus on the nature of outdoor education. *Practical and Informative Adventure Education*.
- [31] Hovey, K., Niland, D., & Foley, J. T. (2020). The impact of participation in an outdoor education program on physical education teacher education student self-efficacy to teach outdoor education. *Journal of Teaching in Physical Education*, 39(1), 18-27.
- [32] Howland, A. M. (1999). Leadership and outdoor education: an exploration of the connections between two interrelated fields. <https://doi.org/10.7768/1948-5123.1015>
- [33] Jidovtseff, B., Kohnen, C., Belboom, C., Dispa, C., & Vidal, A. (2021). Outdoor education practices in Belgian preschools and relationships with both environmental and personal factors. *Journal of Physical Education and Sport*, 21.
- [34] Kendall, S., & Rodger, G. (2015). Evaluation of learning away: Final report. Paul Hamlyn Foundation. Retrieved from <http://learningaway.org.uk/wp-content/uploads/LA-Final-Report-May-2015-1>.
- [35] Kuces, J., & Posner, B. (2009). The leadership challenge: How to make extraordinary things happen
- [36] Laidlaw, J. S. (2000). *A meta-analysis of outdoor education programs* (Doctoral dissertation). Available from ProQuest Dissertations and Theses Database.
- [37] learning at NOLS. *Journal of Outdoor Recreation, Education, and Leadership*, 1(1), 15-37.
- [38] Leirhaug, P. E., Grøteide, H., Høyem, H., & Abelsen, K. (2020). Naturopplevingar, miljøbevisstheit og meistring ividaregående skule. [Nature experiences, environmental consciousness and life skills in upper secondary school]. *Norsk Pedagogisk Tidsskrift*, 3(104), 226-240.
- [39] Leppain, R. M. (2000). Beyond perception: A pretest and posttest evaluation of a regional internet extension in-service training. *Journal of Extension*, 32(2).
- [40] Li, W., Ho, K. Y., Lam, K., Lam, H. S., Chui, S. Y., Chan, G., Cheung, A. T., Ho, L., & Chung, O. K. (2018). Adventure-based training to promote physical activity and reduce fatigue among childhood cancer survivors: A randomized controlled trial. *International Journal of Nursing Studies*, 83, 65-74. <https://doi.org/10.1016/j.ijnur.stu.2018.04.007>
- [41] Listiandi, A. D., Bakhri, R. S., Budi, D. R., Festiawan, R., Febriani, A. R., Kusuma, I. J., ... & Syampurna, H. (2021). Outdoor Education: Influence on self-confidence, personal and social responsibility. *Annals of Tropical Medicine and Public Health*, 24, 243-52.
- [42] Loreman, T., Sharma, U., & Forlin, C. (2013). Do pre-service teachers feel ready to teach in inclusive classrooms? A four country study of teaching self-efficacy. *Australian Journal of Teacher Education*, 38, 27-44. doi:10.14221/ajte.2013v38n1.10
- [43] Lu, F. J., Gill, D. L., Liu, S. H., Chyi, T., & Chen, B. (2021). A Systematic Review and Meta-Analysis of the Effects of Outdoor Education Programs on Adolescents' Self-Efficacy. *Perceptual and Motor Skills*, 128(5), 1932-1958.

- [44] Lund, M. (2004). Adventure education: Some semantics. Retrieved 19 February 2018 <http://www.artsci.gmcc.ab.ca/courses/peds205ml/adeventureeducation.html>
- [45] Mackenzie, S. H., Son, J. S., & Eitel, K. (2017). Using outdoor adventure to enhance intrinsic motivation and engagement in science and physical activity: An exploratory study. *Journal of Outdoor Recreation and Tourism*, 21, 76–86
- [46] McGowan, A. L. (2016). Impact of one-semester outdoor education programs on adolescent
- [47] McKenzie, M. (2000). How are adventure education program outcomes achieved?: A review of literature. *Australian Journal of Outdoor Education*, 5(1), 19-26.
- [48] McKenzie, M. (2003). Beyond “The Outward Bound Process:” Rethinking student learning. *The Journal of Experiential Education*, 26(1), 8-23.
- [49] Md Amin, M. T. (2010). *Effect of a residential outdoor education camp on improvement knowledge and attitudes of first year universities students from selected Malaysian universities*. (PhD Thesis), Universiti Putra Malaysia.
- [50] Mirrahimi, S., Tawil, N. M., Abdullah, N. A. G., Surat, M., & Usman, I. M. S. (2011). Developing conducive sustainable outdoor learning: The impact of natural environment on learning, social and emotional intelligence. *Procedia Engineering*, 20, 389-396.
- [51] Neill, J. (2002). Meta-analytic research on the outcomes of outdoor education. Paper presented at the 6th Biennial Coalition for Education in the Outdoors Research Symposium, Bradford Woods.
- [52] Neill, J. (2003). Introduction to the life effectiveness questionnaire (LEQ). Retrieved 26 June 2013;
- [53] Neill, J. (2008). What is outdoor Education? Definition (Definitions). <http://wilderdom.com/definitions/definitions.html>
- [54] Neill, J. T., & Dias, K. L. (2001). Adventure education and resilience: The double-edged sword. *Journal of Adventure Education & Outdoor Learning*, 1(2), 35–42.
- [55] Neill, J. T., & Heubeck, B. (1998). Adolescent coping styles and outdoor education: Searching for the mechanisms of change. In C. M. Itin (Ed.), *Exploring the boundaries of adventure therapy: International perspectives*, 227–243.
- [56] Neill, J. T., Richards, G. E., & Badenoch, A. (1997). A research evaluation of short-term camps for youth at risk. Canberra, ACT, Australia: National Outdoor Education & Leadership Services.
- [57] Nissinen, V. 2001. Military Leadership. A Critical Constructivist Approach to Conceptualizing, Modelling and Measuring Military Leadership in the Finnish Defence Forces. Academic Dissertation. National Defence College.
- [58] Northhouse, Peter G. 2001. Leadership: Theory and Practice. Sage Publications, Inc., Thousands Oaks. *Journal of Leisure Research*, 37(1), 29–50. <https://doi.org/10.1080/00222216.2005.11950039>
- [59] Pajares, F. (1997). Current directions in self-efficacy research. *Advances in motivation and achievement*, 10(149), 1-49. Retrieved from <https://www.dynaread.com/scientific-library>
- [60] Panwar, N., & Gorsy, C. (2016). Personal Effectiveness and Locus of control among military personnel . December 2015, 1–6. perceptions of self-authorship. *Journal of Experiential Education*, 39(4), 386–411.
- [61] Povilaitis, V., Riley, M., DeLange, R., Verkouw, A. J., Macklin, K., & Hodge, C. J. (2019). Instructor impacts on outdoor education participant outcomes: A systematic review. *Journal of Outdoor Recreation, Education, and Leadership*, 11(3).
- [62] Priest, S. (1986). Redefining outdoor education: A matter of many relationships. *Journal of Environmental Education*, 17(3), 13-15.
- [63] Priest, S. (1999). Research in adventure programming. In J.C. Miles & S. Priest (Eds.), *Adventure programming*, 309-317.
- [64] Priest, S., & Gass, M. (1997). Effective leadership in adventure programming Champaign IL: Human Kinetics.
- [65] Priest, S., & Gass, M. (2005). Effective leadership in adventure programming (Second Ed.). Champaign, IL: Human Kinetics.
- [66] Prince, H. E. (2021). The lasting impacts of outdoor adventure residential experiences on young people. *Journal of Adventure Education and Outdoor Learning*, 21(3), 261-276.
- [67] Prince, H., & Cory-Wright, J. (2022). Outdoor

- education as a deep education for global sustainability and social justice. In *Education in Sport and Physical Activity* (pp. 49-60). Routledge.
- [68] Próchniak, P. (2022). Profiles of Wellbeing in Soft and Hard Mountain Hikers. *International Journal of Environmental Research and Public Health*, 19(12), 7429.
- [69] Propst, D. B., & Koesler, R. A. (1998). Bandura goes outdoors: Role of self-efficacy in the outdoor leadership development process. *Leisure Sciences*, 20(4), 319-344.
- [70] Purc-Stephenson, R. J., Rawleigh, M., Kemp, H., & Asfeldt, M. (2019). We are wilderness explorers: A review of outdoor education in Canada. *Journal of Experiential Education*, 42(4), 364-381.
- [71] Rose, L., Williams, I. R., Olsson, C. A., & Allen, N. B. (2018). Promoting adolescent health and well-being through outdoor youth programs: Results from a multisite Australian study. *Journal of Outdoor Recreation, Education, and Leadership*, 10(1), 33-51.
<https://doi.org/10.18666/JOREL-2018-V10-I1-8087>
- [72] Rose, L., Williams, I. R., Olsson, C. A., & Allen, N. B. (2018). Promoting adolescent health and well-being through outdoor youth programs: Results from a multisite Australian study. *Journal of Outdoor Recreation, Education, and Leadership*, 10(1), 33-51.
<https://doi.org/10.18666/JOREL-2018-V10-I1-8087>
- [73] Reed, J., & Smith, H. (2023). 'Everything we do will have an element of fear in it': challenging assumptions of fear for all in outdoor adventurous education. *Journal of Adventure Education and Outdoor Learning*, 23(2), 107-119.
- [74] Samsudin, S., Kamalden, T. F. T., Aziz, A., Ismail, M. H., Yaakob, S. S. N., & Farizan, N. H. (2021). The Impact of Outdoor Education Camp Program in Building Resilience among University Students. *Asian Journal of University Education*, 17(4), 71-83.
- [75] Schumann, S. A., Paisley, K., Sibthorp, J., & Gookin, J. (2009). Instructor influences on student.
- [76] Sharpe, E. K. (2005). "Going above and beyond": The emotional labor of adventure guides.
- [77] Silva, B., Cruz, G., Bentes, R., & Lima, R. F. (2022). Surfing on physical education curriculum and the impact on student's well-being. *Journal of Physical Education*, 33.
- [78] Smith, C. A., & Thomas, E. N. (2021). Hiking in the shadow of Mt Doom: how outdoor adventure programs can impact locus of control in university students. *Journal of Adventure Education and Outdoor Learning*, 1-12.
- [79] Sprague, N., Berrigan, D., & Ekenga, C. C. (2020). An analysis of the educational and health-related benefits of nature-based environmental education in low-income Black and Hispanic children. *Health Equity*, 4(1), 198-210.
<https://doi.org/10.1089/heq.2019.0118>
- [80] Thomas, G. J. (2019). Effective teaching and learning strategies in outdoor education: findings from two residential programmes based in Australia. *Journal of Adventure Education and Outdoor Learning*, 19(3), 242-255.
- [81] Vigane, Å., & Dyrstad, S. M. (2022). Learning leadership in outdoor education: Effects of feedback. *Journal for Research in Arts and Sports Education*, 6(1).
- [82] Vikene, O. L., Vereide, V., & Hallandvik, L. (2019). Ledelse og læring i friluftsliv [Leadership and learning in friluftsliv]. In A. Horgen, M. L. Fasting, T. Lundhaug, L. I. Magnussen, & K. Østrem (Eds.), *Ute! Friluftsliv – pedagogiske, historiske og sosiologiske perspektiver* [Outside: Friluftsliv – pedagogical, historical and sociological perspectives]. Fagbokforlaget.
- [83] Wood, C. (2023). An exploration of how primary school children's social values are influenced by their experiences during residential outdoor learning (Doctoral dissertation, University of Worcester).
- [84] Yukl, G. A. (2013). *Leadership in organizations* (8th ed.). Pearson.