International Journal of Research Studies in Education
2018 Volume 7 Number 3, 73-84

Transformational elements for learning outdoors in Finland: A review of research literature

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ISSN: 2243-7703
Online ISSN: 2243-7711

OPEN ACCESS

Received: 2 May 2017 **Revised**: 23 May 2017 **Accepted**: 7 June 2017
Available Online: 15 June 2017 **DOI**: 10.5861/ijrse.2017.1828

Abstract

In Finland, new curriculum and new teaching guidelines have placed new demands on schools and learning requirements. This article discusses outdoor education and organized learning in out-of-school setting. Thematic inquiry based learning is a significant method in outdoor learning because it brings pupils and teachers outside of the traditional classroom. Therefore, we discuss how outdoor education has been defined and why outdoor education should be an important element of education at all schools according to the scholarly research. Outdoor education has been found to increase student's psychological and physical well-being, and students have been found to perform and learn better in applied environments. The pedagogical concepts that underlie related teaching concepts are also discussed, and a review of the relevant literature is performed. In conclusion, we highlight some of the main benefits of outdoor education as out-of-school learning such as for wellbeing, self-capability and experimental learning experiences and moreover, its applications for the pupils in the 21st century.

Keywords: outdoor education; out-of-school learning; learning environment; environmental education; place-based education

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1. Introduction

In the field of educational research, there is a growing interest in outdoor learning environments (Dahlgren & Szczepanski, 1998; Martin, 2010; Rickinson, Dillon, Teamy, et al., 2004; Stewart, 2008; Stewart & Műller, 2009). The purpose of this article is to explore existing research literature, and thus discuss different theoretical perspectives, and concepts concerning outdoor education, and out-of-school learning settings. Our aim is to discuss outdoor education by first defining the concept and then elaborating its possible contribution to learning processes. Our aim is to contribute new ideas and perspectives in this field that has aroused growing interest in Finland (see Cantell, 2004; Jokela, 1995; Karppinen, 2012; Kurtakko, 2015; Marttila, 2016; Sjöblom, 2012; Vartiainen, Pöllänen, Liljeström, Vanninen, & Enkenberg, 2015) and worldwide (Kendall, Murfield, Dillon, & Wilkin, 2006; Keskitalo, 2010; Nisbet, Zelenski, & Murphy, 2009; Stanisavljević Petrović & Marković, 2014). This article aimed to answer the following questions: (a) What is understood by outdoor education? (b) What pedagogical solutions have previous studies found with respect to outdoor education? and (c) What benefits does outdoor education bring to schools and learning?

Given the rise of urbanization, digitalization, and moreover technology, increasing attention has been placed on our skills and knowledge, our place in the world, and our relationship with the land, and nature. Crucially, there is considerable evidence that children worldwide in postmodern societies are losing their contact with nature (Kellert, 2009; Miller, 1979). In the context of education, the school system is under constant pressure to transform and to meet the needs of a rapidly changing society. There is a gap between school practices and the reality of surrounding societies and environments (see e.g., Rajala, 2016). For example, despite the high performance of the education system in Finland, many pupils do not prosper at school nor fully participate in school (Leskisenoja, 2016; Rajala, 2016; Sahlberg, 2011). Further, Finland has started in year 2016 to implement the new National Core Curriculum for Basic Education (Finnish National Board of Education, 2014), which aims to meet these needs and challenges. The core area within the reform is the new approach to learning, which emphasizes for example the role of the student as active agency and learning process within interaction in out-of-school settings.

The purpose of primary school is to educate future citizens who are mentally prosperous, able to effectively work, innovative, living meaningful life, and contribute to society with the skills that will be required in the future. Thus, schools must set goals and organize learning according to the requirements and necessary competencies of citizens in the 21st century (Binkley, Erstad, Herman, et al., 2012; Dumont, Istance, & Benavides, 2010). For example, Stanisavljević Petrović and Marković (2014) emphasized that "[f]rom the viewpoint of the current changes in schools, a partnership with the community is a necessity, because schools are expected to open up towards their surroundings and decontextualize school knowledge, which implies a bigger deal of learning outside the classroom for the purposes of the implementation of school curriculum contents" (p. 53). The writers of the article are working in teacher education at the University of Lapland, where a new teacher training program having emphasis on outdoor education has been launched. This is program with such emphasis is unique in Finland. The aim is to train teachers who understand the significance of nature to learning and growth, and are able to conduct pedagogically relevant education outdoor, and take account sustainably development in learning.

Next we will introduce the recent changes in the Finnish education system that are related to the theme of this article, followed by our review of the definitions of outdoor education. Based on them, our ultimate purpose is to contribute new viewpoints to the discussion of the meaningfulness and downright necessity of outdoor education.

2. The Case of Finland: The Recent Reform of General Education

This article gives theoretical insight into the pedagogical concept of outdoor education. We base our analysis on the case of Finland. The Finnish educational system and teacher training programs have succeeded excellent in international comparisons (OECD, 2016; see also Kupiainen, Hautamäki, & Karjalainen, 2009; Välijärvi, 2014), and Finland has been ranked among the top countries in the field of education (Kupari, Välijärvi, Andersson, et al., 2013; Lavonen & Laaksonen, 2009).

In Finland, a national core curriculum has traditional worked as the fundamental guidelines of basic education that schools follow (Simola, 1995). The national core curriculum is drawn up by the Finnish National Board of Education: "It includes the objectives and core contents of different subjects, as well as the principles of pupil assessment, special-needs education, pupil mental wellbeing and health, and educational guidance. The principles of a good learning environment, working approaches as well as the concept of learning are also addressed in the core curriculum" (Finnish National Board of Education, 2016).

Although Finnish teachers have to certain extent free hands to decide how they realize the contents and goals of the curriculum, the main ideas of current educational ideology can be found in the curriculum (see e.g., Uusiautti & Määttä, 2013). It means that the local curricula is designed based on the national curriculum (Finnish National Board of Education, 2016).

The core curriculum is revised regularly, and the new national core curriculum in Finland for basic education was introduced in the fall of 2016. The curriculum emphasizes new pedagogical approaches as meaningful and thematic inquiry based learning within various learning environments, such as outside the classroom. Moreover, the new curriculum illustrates the change learning environments: the emphasis has shifted from in-school environments into out-of-school settings (see also e.g., Hansen Sandseter & Hagen, 2016; Prince, 2016). According to new pedagogical approach traditional subjects are likely to get less emphasis in teaching as they are replaced with themes or topics and holistic projects relevant to society. This means that subject-specific lessons are been replaced by teaching by topic. In Finland, this new pedagogical approach is called "phenomenon learning" (ilmiöoppiminen), which is based on thematic inquiry-based learning (see e.g. Lonka, Hakkarainen & Sintonen 2000). For instance, pupils are studying topic sustainable development, which would include elements of math's, biology, arts, writing skills and communication skills. The recent curriculum reform of general education in Finland enables, in fact, more or less requires to conduct outdoor learning to certain extent in schools.

3. Definition: What is outdoor education?

A basic definition for outdoor education is "education in, about and for the outdoors" (Donaldson & Donaldson, 1958, p. 17). The concept outdoor itself refers to open-air settings (English Oxford Living Dictionaries). Outdoor education comprises a holistic form of education with the goal of enhancing the overall well-being of children and adolescents, including their academic, physical, emotional, social, and psychological well-being (Harun & Salamuddin, 2014). The conceptual jungle in the field is evident. Concepts of outdoor education, outdoor studies, and outdoor learning are somewhat overlapping (Prince, 2016). We will introduce some of the basic definitions.

Primarily, according to Heather Prince (2016), outdoor studies, in which outdoor education is part of, is rather young and emerging discipline with interdisciplinary characteristics. Actually, Humberstone, Prince, and Henderson (2016) suggest that outdoor studies "fruitfully encompasses a broad range of approaches, foci and methods such as, but not limited to, experiential learning, adventure education, organized camps, environmental education, nature-based sport and wilderness therapy" (p. 2). Moreover, according to Rickinson et al. (2004), "the concept of 'outdoor learning' is a broad and complex one, which touches on a wide range of educational activities in many different settings (p. 15)." For example outdoor adventure education, field studies, nature

studies, outdoor play, heritage education, environmental education, experiential education, and agricultural education all form part of outdoor learning (Rickinson et al., 2004). These definitions encompass a rather wide understanding of the contents and concept of outdoor learning. However, at the most basic level, outdoor learning refers to learning that takes place outside the classroom in the outdoors.

"Out-of-school learning" is a related term, which indicates learning outside of traditional school settings (Resnick, 1987; Taylor et al. 2010). The latter is part of a broad field that intersects with the related fields of environmental education, adventure education, nature tourism, and outdoor recreation (Gilbertson, Bates, McLaughlin, & Ewert, 2006). According to Dahlgren and Szczepanski (1998, p. 51), outdoor education aims to develop knowledge of the relationships between nature, culture, and society through the experience of the outdoors. Thus, outdoor pedagogy provides students with a more holistic development by developing cognitive skills and allowing interaction with every part of the natural and human environment. This holistic approach of outdoor education has great value and significance both individually for students and as a whole for society.

When comparing outdoor education with related concepts, despite its wide-ranging contents and varied methods, it has a distinctive focus on the relationships between phenomena, rather than isolated facts (Parkin, 1998). Outdoor education has somewhat the same premises as environmental education. Environmental education aims to change people's attitudes and enhance the adoption of sustainable lifestyles (Venkataraman, 2009). In this sense, the purpose of environmental education is to increase awareness of environmental questions (Fraser, Gupta, & Krasny, 2014), to improve students' understanding of the values and attitudes surrounding the enhancement and protection of nature and sustainability, to equip students with necessary information and skills (Blewitt, 2005), and to encourage the adoption of behaviors that support the environment (Chawla & Cushing, 2007). However, Parkin (1998) felicitously describes the difference between traditional and outdoor learning approaches: "Our values of fulfilment, morality, and self-responsibility are best provided through meaningful activity, experience and knowledge in the outdoors… An outdoor education program may seek to develop values relating to group work, leadership, or self-esteem." His comment shows how outdoor education is focused on meaningful learning experiences and increasing skills, self-knowledge, appreciation, and respect for others and for our surroundings.

Place-based education (PBE) is closely related with both outdoor and environmental education. Basically, it emphasizes the creation of connections between the classroom and the community. David Sobel (2004) defines place-based education, as follows:

> *Place-based education is the process of using the local community and environment as a starting point to teach concepts in language arts, mathematics, social studies, science and other subjects across the curriculum. Emphasizing hands-on, real-world learning experiences, this approach to education increases academic achievement, helps students develop stronger ties to their community, enhances students' appreciation for the natural world, and creates a heightened commitment to serving as active, contributing citizens. Community vitality and environmental quality are improved through the active engagement of local citizens, community organizations, and environmental resources in the life of the school* (p. 7).

Place-based education is also characterized as the pedagogy of place, or place-based learning. It thus incorporates concepts of experiential education, community-based education, education for sustainability, and environmental education (Rose, 1995; Sobel, 2004; Kurtakko, 2015). The concept of the "landfull framework" intersects both outdoor and place-based education. There are four areas of "landfullness": (a) being deeply aware, (b) interpreting land history, (c) sensing place in the present, and (d) connecting to home. The essence of landfullness is the discovery of a personal connection to the land that is an integrated part of everyday life (Baker, 2005). Moreover, Mannion and Lynch (2016) argue that place "makes outdoor pedagogy viable, meaningful and worthwhile" (Mannion & Lynch, 2016, p. 92). They are elaborating place-responsive teaching, which has several elements such as cognitive, emotional, aesthetic and ethical (Mannion & Lynch, 2016).

One of the previously mentioned components of outdoor education is adventure. However, this component should be distinguished from outdoor education. Adventure education has a strong focus on experiences, sports, and action as well as an element of reflection, fun and enjoyment (see Bisson & Luckner, 1996). This may share similarities with outdoor education despite different methods and goals. Adventure education is based on adventure experiences that enhance the self-concept and social interactions by moving education participants to take risks and use their competencies (Priest & Martin, 1985). This type of education can occur in a natural or artificial environment and focuses on specific themes, such as enhancing leadership skills, decision making, or boosting participants' self-esteem (see Attarian, 2001). Meanwhile, outdoor education has a wider emphasis on relationships within the natural world and on positive connection with and respect of nature rather than encountering personal competencies and surpassing individual limits.

4. Outdoor education as a meaningful learning experience

Meaningful learning occurs when students build the knowledge and cognitive processes necessary for successful problem solving. This is often defined in contrast to rote learning (Karpicke, 2012; Mayer, 2008). According to educational research literature, one challenge rests in making school lessons more relevant and meaningful for students (see Salmela-Aro, Muotka, Alho, Hakkarainen, & Lonka, 2016). Learning can become more meaningful and understandable when incorporated into the social activities of students and schools. Outdoor education aims at meaningful and holistic learning experiences since it attempts to directly involve participants in learning activities and employ as many senses as possible (Parkin, 1998). In addition, outdoor education aims to make learning more interesting, challenging, and even fun, as described by Parkin (1998, p. 275).

A comparative study of Finland and the United States showed that students perceived outdoor education as valuable because it provided meaningful experiences in benefit of both people and the natural world and helped to counteract societal disconnection from nature (Erpestad, 2013). Stewart (2003) pointed out that outdoor education does not necessarily have to aim at providing learners with a deep-rooted sense of place. Instead, its benefits can also rest in developing stronger connections with our homes and learning to respect them (see Nisbet & Zelenski, 2011).

For today's children and young people, this kind of learning can be very important since the sense of meaningfulness previously connected with nature has begun to fade and be lost. Outdoor education also offers new kinds opportunities to learn about oneself as well as one's strengths, weaknesses, and potential (e.g., Taniguchi, Freeman, & Richards, 2005). The current generation has shown a great disconnect from nature and the inability to effectively function in the outdoors. Nisbet, Zelenski, and Murphy (2009) even predicted that disconnection from the natural world can inadvertently lead to our planet's destruction. Several researchers have recognized that natural environments relieve stress and have a restorative effect on people (see Cooper & Barnes, 1995; Korpela et al 2014). A study on 9- to 13-year old urban Helsinki dwellers showed that these children would rather spend their free time in shopping centers and public swimming pools or inside homes in front of the television, at a computer, or using other modern media rather than spending leisure time outside (Stenvall, 2009).

Cheng and Monroe (2012) argued that children's connection with nature should be emphasized on four levels: (a) enjoyment of nature, (b) empathy for creatures, (c) sense of oneness, and (d) sense of responsibility. These aspects all contribute to the social and psychological well-being of children. Indeed, another important benefit of outdoor education is the promotion of social relationships and the practice of social skills in group settings (Harun & Salamuddin, 2014), thereby increasing the meaningfulness of this approach from students' perspectives (see also Garrison, Östman, & Håkansson, 2015).

5. Experiential education: Pedagogical practices in outdoor education

Outdoor education draws upon the philosophies, theories, and practice of experiential and environmental

education (Maynard, Waters, & Clement, 2013a; 2013b). Simon Priest (1986) has built a model of outdoor education based on experiential learning processes. According to Priest, outdoor education is comprised of six definitional characteristics (Priest, 1986, p. 13). First, he argues that it is a teaching method to enhance learning. Second, it can be represented as a process of experimental learning via meaningful experiences. Third, it takes place in outdoor settings. Fourth, it involves experiential learning, or the application of all six senses (sight, sound, taste, touch, smell, and intuition) and the three domains of learning (cognitive, affective, and motoric). Fifth, it is based on interdisciplinary curriculum that crosses the boundaries between different subjects. Finally, he argues that at its core, it deals with the relationships between natural resources, people, and society. Moreover, Priest identifies four categories of relationships: interpersonal, intrapersonal, eco-systemic, and ekistic. The interpersonal refers to relationships between people and how people co-operate, communicate, and build trust during social interactions. The second, intrapersonal, deals with individual understanding and how one relates to his or herself, i.e., level of independence, self-concept, and perceptions of abilities and limitations. The third, eco-systemic, refers to the dynamics and interdependence of all parts of an ecosystem. The fourth, ekistic, deals with the interactions between people and their surroundings. Accordingly, Priest argues that outdoor education includes elements of both adventure and environmental education (Priest, 1986, pp. 14-15).

Education that occurs outdoors is distinct from the learning that happens in the classroom. For example, it could involve an inquiry-based learning project designed by a teacher, versus the traditional model of students sitting at school and learning from books. Experiential education focuses on field trips and searching for learning experiences outside the schoolhouse, often involving projects in the community, gathering data from surroundings, or visiting different places or institutions (House of Commons, 2005). Thus, this model encompasses a wide range of possibilities and a variety of learning experiences.

There is a possibility within outdoor education to change the roles of both student and teachers. Students become active learners when taken outside the classroom walls. Since action takes precedence over attempts to construct knowledge passively, in this case, teachers generally cannot plan a curriculum unit as a predictable package. Teachers themselves become active learners, forming experiences alongside their students. This learning represents a joint process and involves reflection upon the learning activities and the response of students to the activities. In this way, teachers also come to play a more active role beyond being simple recipients of a school district's policy or curriculum decisions (Itin, 1999).

However, certain criticism within educational research and the meaningfulness of outdoor education has also emerged, especially concerning pedagogical practices. Maynard and Waters (2007) examined teachers and argued that they were making greater use of the outdoor environment but in a partial and limited way. The examined teachers, for example, took pupils outdoors only in good weather and conducted the same kinds of tasks or made use of the same pedagogical approaches as they did during in-school settings. Basically, these were predominantly teacher-centered tasks, focusing on subject knowledge and basic skills (Maynard & Waters, 2007). The main challenge, in this case, is that traditional pedagogical practices are maintained by teachers. Consequently, an essential aspect of the learning process is not only the learning environment itself, whether indoors or outdoors, but rather the targets and aims of learning. In other words, environmental education has also advocated a transition from teacher-centered pedagogical approaches toward more student-centered models in outdoor settings. It is important to remember that moving the learning environment from the classroom to outside does not solely guarantee that learning will be profound and based on understanding but have to be even more carefully designed in pedagogical sense than in a traditional classroom.

Outdoor education also involves fostering new kinds of social and group skills. Tuckman (1965) proposed a group development model: the forming–storming–norming–performing model. This model describes the necessary and inevitable phases by which a team grows via facing challenges, tackling problems, finding solutions, planning work, and delivering results, as a whole. Outdoor education can thus be seen as a concept and practice with a range of approaches, outcomes, and locations. According to Rickinson et al. (2004), firstly, outdoor learning concretely focuses on learning about nature (e.g., via outdoor ecological field studies), learning

about society (e.g., through community-based gardening initiatives), learning about nature-society interactions (e.g., by visits to outdoor nature centers), learning about oneself (e.g., therapeutic adventure education), learning about others (e.g., in small-group fieldwork), and learning new skills (e.g., via outdoor adventurous activities). Secondly, the intended outcomes of outdoor learning can include increased knowledge and understanding of different aspects of the environment (e.g., geographical processes or food growing techniques) as well as the development of new attitudes (e.g., toward the future or peers/family), values and feelings (e.g., the environment or oneself), skills (e.g., orienteering or communication), behaviors (e.g., in group interactions or personal coping strategies), and individual growth (e.g., self-confidence or personal effectiveness). Thirdly, the locations of outdoor learning can encompass school grounds or gardens, wilderness areas, urban spaces, rural or city farms, parks, gardens, and field study/nature centers (Rickinson et al., 2004, p. 15).

6. The necessity of outdoor education

Outdoor education has varied meanings and consequences. First of all, it promotes students' pro-environmental behavior and attitudes and enables children to better connect with nature and their environmental surroundings. McCurdy, Winterbottom, Mehta, and Roberts (2010) argued that children can benefit both mentally and physically from time spent in nature. In terms of mental health, McCurdy et al. (2010) contended that exposure to nature can improve children's ADHD symptoms, mitigate depression and stress, and foster emotional well-being. Second, outdoor education can contribute to overall well-being and happiness. According to Collado and Corraliza (2015), children must have positive experiences in nature in order to turn into adults who respect the environment. Outdoor education can offer such positive experiences in nature and the environment and, even more importantly, help children understand themselves as part of nature. Zelenski and Nisbet (2012) encouraged further research on human-nature connections, as their studies suggest that nature connectedness could be a path to human happiness. Pleasant moods experienced outdoors facilitate a subjective sense of connection with nature and, for example, promote environmentally sustainable behavior (Nisbet & Zelenski, 2011; see also Bonnett, 2013). Third, outdoor education can serve different kinds of learners and enhance their connection with nature and their relationships with peers and others in their surrounding community, thereby providing them with positive learning experiences.

Physical activities performed outdoors, particularly in green environments, have been shown to positively impact mental health and overall well-being among adults and elderly people suffering from depression, anxiety, or other mental health problems (Frumkin 2001; Pasanen, Tyrväinen, & Korpela, 2014). In addition, activities in the natural environment may be even more vital for children.

Environmental attitudes are culturally learned through upbringing and education (Bonnett, 1999). Even so, teaching professionals have noted that students' behaviors are difficult to change through environmental learning programs (Kankainen, Määttä, & Uusiautti, 2017; Krasny, Kalbacker, Stedman, & Russ, 2015). Outdoor education could address this problem since its methods and goals are based on positive learning experiences and enhancement of the sense of connection with one's environment and place and with nature. The value of varied, natural, environmental elements and the flexibility of the learning experience should not be underestimated when applied in the context outdoor learning.

7. Discussion

In this paper, we have reviewed the existing research literature, and concepts of outdoor education and discussed theoretically its changes and challenges. Naturally, our viewpoint is based in Finland where the opportunities to bring learning outside are good due to our small cities and proximity of nature everywhere. Teachers also have a great freedom to plan their lessons and how they teach the necessary contents of the study plans. The situation is quite different in many other countries where the ways subjects are taught in schools are strictly controlled and designed (see e.g., Sahlberg, 2011). However, the main purpose of the article was to analyze mainly the possibilities, and benefits of outdoor education, which we hope is useful to every school

regardless of place. The ultimate objective is, therefore, to provide new insights of how to enhance learning and well-being in children (see also Uusiautti & Määttä, 2016).

According to Carpenter and Harper (2016), outdoor activities have numerous mental health benefits (see also Richards, Carpenter, & Harper, 2011). Given the benefits, there is no question that activities in the natural environment may be even more vital for children. Cognitive and affective development, which take place in natural settings in childhood, are necessary aspects of well-being, as well as awareness and appreciation of nature (Kellert, 2009). Interaction with the environment has been said to be especially important during the primary school age, which is the most vital period for the development of inherent tendencies (Cobb, 1977; Kellert, 2009). Furthermore, outdoor activities represent another opportunity for physical activity (Priest, 1986).

According to studies of outdoor education, it appeals that the strong motivation to conduct out-of-school learning in outdoor settings are the diverse significant benefits for learning, health, and wellbeing (see e.g. Carpenter & Harper, 2016). The crucial question concerning outdoor education in out-of-school setting is the question of how the learning is organized. There is still wide range of teacher-centered learning when pupils' role stays in following the teacher. Emphases of outdoor education challenge the traditional teaching methods and encourage us to consider new ways to create learning environments and enhance the connection between human beings and their environments.

We have discussed here the elements of outdoor education mainly inspired by the emphases in the new Finnish core curriculum for basic education. However, it is important to notice that the changes do not happen if teachers are not prepared or willing to include them as a part of their teaching. Teacher education in universities and in-service education are the channels to train teachers about the opportunities, means, and benefits of outdoor education.

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