



Trinity College Dublin

Coláiste na Tríonóide, Baile Átha Cliath

The University of Dublin

The Importance of Outdoor Learning in 21st Century Education

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Prof Carmel O’Sullivan

School of Education

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Overview of Presentation

- Background to outdoor education
- Theoretical foundations
- A balanced approach
- Empirical research

To name a few ...

Forest school

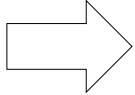
Out of school learning (OSL)

Outdoor learning

Outdoor education

Outdoor experiential education (OEE)

Outdoor adventure education (OAE)

Environmental education (EE)  Education for Sustainable Development (ESD)

Environmental literacy

Education outside the classroom (EOtC)

Udeskole (outdoor school)

An innovative educational idea in 1930s

‘Outdoor adventure education (OAE) is an experiential method of learning that incorporates the use of all senses. It generally takes place through interaction with the natural environment. In outdoor education, the focus is on relationships among people and natural resources.’ (Nicholas, 2019)

Kurt Hahn, a progressive German educator, who lived much of his life in England, founded the Outward Bound programme in Gordonstoun, Scotland.

Character development - as important as academic development

‘Hahn was very concerned with what he thought were modern civilization's "social diseases" or declines, which he believed were causing individuals within society to lose certain positive attributes that previous agrarian societies had naturally cultivated. He suggested that the industrial revolution had gradually removed the conditions that cultivated those positive traits.’ (Nicholas, 2019)

Hahn believed that modern civilization had caused the following general declines:

Hahn's Social Diseases

1. A decline in physical fitness due to modern methods of transportation
2. A decline in initiative or enterprise due to a social tendency toward being a spectator rather than participator
3. A decline in the individual's memory and imagination because of confusion and restlessness in modern life
4. A decline in skills and care because traditions of craftsmanship had diminished
5. A decline in self-discipline from an over-reliance upon ubiquitous stimulants and tranquilizers
6. A decline in human compassion because of the hurried lifestyle inherent to a modern lifestyle. (Richards, 2007)

Establishing a Theoretical Base for Outdoor Education

John Dewey's progressive educational theories have been influential on experiential learning.

In the late 1930s, Dewey proposed that subject matter should not be learned in isolation and that education should begin with student experience and be contextual (Breunig, 2005).

Gestalt theory (a branch of affective theory) argues that an organism cannot be separated from its environment (Nicholas, 2019).

Establishing a Theoretical Base for Outdoor Education

Cognitive theory is closely aligned with outdoor education because the aim of many of its activities is to transform self-defeating thoughts of **I can't** to self-confident thoughts of **I can**. (Nicholas, 2019)

"Confronting fears, taking risks, surpassing previous limits, and accepting personal responsibility" reflect cognitive theory methods (Moote & Wodarski, 1997)

Establishing a Theoretical Base for Outdoor Education

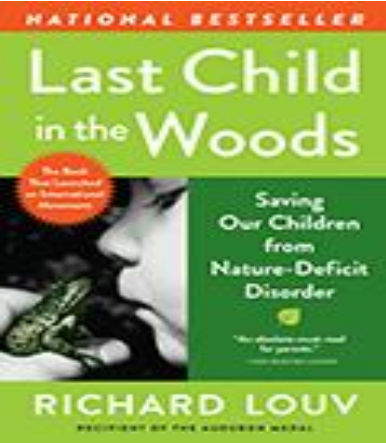
A co-constructive developmental pedagogy underpins outdoor education. It validates 'students as **knowers**, situates learning in students' **own experience**, and defines learning as **mutually constructing meaning**' (Baxter Magolda, 1999, p. 27).

Cognitive dissonance is also characteristic of outdoor education. Cognitive dissonance is created when the combination of challenge, mastery, and success inherent in outdoor education encourages growth in participants. 'By rising to the challenge and overcoming the stressful situation, individuals experience personal growth' (McGowan, 2016).

Forest School Movement

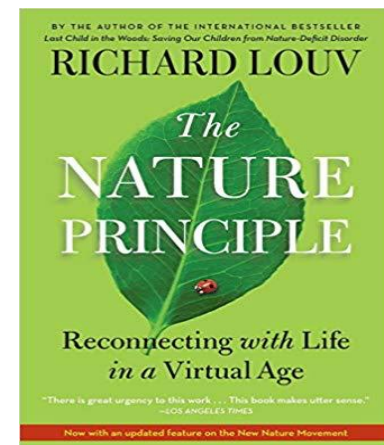
It began several decades ago in Scandinavia and was developed in the UK after a visit to Denmark in 1995 (Borradaile, 2006).

Facilitated by trained leaders, Forest Schools provide outdoor education within a forest setting through regular visits to a site. The visits build on children's innate motivation and attitude to learning enabling them to take risks, make choices, take decisions, and pursue their own learning while developing an understanding and appreciation of the natural environment (Slade et al., 2013).



‘Nature Deficit Disorder’

Richard Louv (2005, 2011) used the term ‘nature-deficit disorder’ to highlight what he perceived as an alarming disconnection from nature in Western society. He suggested that it underpins a range of behavioural and health problems, especially among children but increasingly affecting adults also.



‘Nature Deficit Disorder’

Louv calls on outdoor educators to explore and develop innovative solutions that, ‘working within the complexities of an increasingly urbanized and technology-driven society, reconnect children to nature and, in turn, help craft lifestyles characterized by health, well-being, sustainability, and environmental stewardship’ (Grimwood et al., 2018).

‘Lifeboats to the Future’

Rawles (2013) suggests that outdoor experiential education (OEE) could provide much needed experiences that contribute to what he describes as ‘lifeboats to the future: values, skills, and knowledge that could be invaluable life savers as the current social, economic, and environmental crises unfold’ (Towers and Loynes, 2018).

Eco-centric Approach to Education

The growth in outdoor education has been driven to date by an anthropocentric pursuit of the benefits to humans of spending time in natural environments. While these benefits are very significant, a more eco-centric, post-humanist approach to education can emphasise the infinite benefits for nature and the possibilities for responsible environmental behaviour (REB) through strengthening the bond between human and non-human nature. In this sense, non-human nature can move away from being used merely as an instrument in the development of the child and, by taking a post-humanist perspective towards education, it can become a vital part of environmental education that will benefit both humans and non-humans alike (Barrable, 2019).

Empirical Evidence

Countless studies demonstrate that exposure to natural environments increases environmental knowledge, encourages development of pro-environmental attitudes, impacts positively on mental health, well-being, cognition, social skills, emotional/behavioural impacts, and ethical/attitudinal impacts, while proximity to green spaces is linked to physical activity. (Harris, 2017b)

Outdoor classrooms can be located anywhere outdoors, but were found to be especially efficient when located near a school, such as in the playground, a nearby park, forest, river, or pond (NRC, 2010).

A Balanced Approach

However Gill (2011) highlights that rather than being a panacea, spending time in nature is just part of a balanced diet to support children's development (Harris, 2017b).

‘Outdoor learning cannot replace classroom activities, and neither should it be seen as a rival of classroom learning; it should, instead, be considered as a complementary form of learning adding an extra dimension to education. This also means that it is more than just a leisure activity or time-off, and its educational value should be taken more seriously’ (Fűz, 2018).

A Balanced Approach

Successful teachers in outdoor classrooms developed curriculum that linked outdoor and formal classroom lessons and used the environment as a context for learning (Chambers & Radbourne, 2014; Eick, 2012).

High quality environments provide opportunities that support children's learning and development, and it is crucial that value is placed on **both** indoor and outdoor environments as opportunities to develop quality interactions (Tonge, Jones & Okely, 2019).

Teaching Strategies

Teaching techniques in outdoor settings are inherently different than in a formal classroom, yet the differences are rarely discussed in the literature.

While learning is affected by the outdoor context, Waite (2011) queries whether being outside necessarily changes the pedagogy employed in that context to one which incorporates greater choice and enjoyment for learners?

The Importance of Reflection as a Teaching Strategy

Towers and Loynes (2018) warn of the limitations of experiential learning on its own, arguing for the importance of combining it with “critical reflection on knowledge, understanding and personal decision making” (Higgins, 2009, p. 44).

Educators should expose students to the outdoors regularly, explore with all senses, create experiences that provide context and application of the material presented, and provide pre- and post-activities to reinforce gains made in the outdoor classroom. (Meighan & Rubenstein, 2018)

A Sample of the Empirical Evidence

Standardized Test Scores

Positive correlations have been found between standardized test scores, classroom performance and the use of outdoor classrooms (e.g. Eick, 2012; Ghent et al., 2014; Lieberman & Hoody, 1998; Rios & Brewer, 2014; Ruiz-Gallardo et al., 2013; Taylor & Kuo, 2006).

In a national study in the US, researchers found that students enrolled in programmes that used the environment to integrate the curriculum, had significantly better performance on standardized testing in reading, writing, maths, science, and social studies (Lieberman & Hoody, 1998).

Writing Skills

Positive correlations were found by Norfolk County Council on the impact of Forest School projects on boys' writing at Key Stage 2 through information and communications technology (ICT) (Butwright et al., 2007).

Scott & Boyd (2016) found a positive link between child-led exploration of ecology through field work sessions and short-term improvement of writing skills in primary school (Otte et al., 2019).

Physical Activity and Academic Achievement

Several studies have examined the link between physical activity and academic achievement, supporting a connection between an increase in physical activity and an increase in academic achievement (e.g. Ericsson & Karlsson, 2012; Fedewa & Soyeon, 2011; Mead, Roark, Larive, Percle, & Auenson, 2013; Nordin, 2008).

Schneller's research showed that pupils participating in outdoor education increased their physical activity compared to pupils who did not participate in outdoor learning (Schneller et al., 2017).

Cognitive Functions

Case studies illustrate that Education Outside the Classroom (EOtC) has a positive impact on cognitive abilities and academic performance through improving social relations, self-confidence, and increased physical activity (Backman et al., 2012; Fiennes et al., 2015; Hattie, 2009; Jordet, 2007; Rickinson et al., 2004).

EOtC may also influence cognitive abilities and academic learning by providing intuitive and meaningful learning contexts that may improve memory and conceptual understanding (Backman et al., 2012; Fiennes et al., 2015; Hattie, 2009; Rickinson et al., 2004).

Cognitive Functions

Several studies have found positive associations between the amount of greenspace surrounding schools and students' verbal skills (Richardson & Murray, 2017), certain cognitive functions (Dadvand et al., 2015), and reading skills (Kuo, 2015).

Similarly, cognitive performance can be influenced by experimentally manipulating the presence of natural stimuli (i.e. plants) within a classroom (Van den Berg, Wesselius, Maas, & Tanja-Dijkstra, 2016).

Imaginative Play

Outdoor, natural environments provided a wider variety of play behaviours for children (Dennis et al., 2014).

Research in the US has found that children who play in natural environments undertake more creative, diverse and imaginative play; which is seen as an important element in children's development (Sobel, 1993; Grahn, 1996; Taylor et al., 1998; Derr, 2001; Kellert, 2002; Fjortoft, 2004). (O'Brien & Murray, 2007)

Imaginative Play

Outdoor education encouraged students to conduct experiments, engage in imaginary play, develop motor skills by playing with loose material such as sticks and leaves, and learn to manage both positive and negative emotions (Änggård, 2010; Waite et al., 2015).

Outdoor spaces have been found to encourage creative play that stimulates positive cognitive, social, and emotional development (Kellert, 2002; Malone & Tranter, 2003; Taylor & Kuo, 2006; Wirth & Rosenow, 2012).

Free play

Interestingly, Waite and Davis (2007) found that free play and child-initiated exploration of the natural environment appeared to engage children to a greater extent than adult-led activities in Forest School. The children demonstrated high levels of involvement, signalling that deep learning was taking place (Pascal and Bertram, 1997).

Resilience and Outdoor Adventure Education

The 21st century world still requires individuals to be resilient.

Outdoor adventure education programmes are acknowledged as a vehicle for behavioural change. Central to their effectiveness and appeal are the notions of risk and challenge. Kelly's (2019) research concluded that challenge is what is crucial for improving resilience, and not necessarily participation in adventure programmes. He also found that the residential component was important in the immediate to short term but needs further research to explore longer term results.

Behavioural Change

Improved behaviour in and out of the classroom was found amongst students who were engaged in curriculum that integrated outdoor learning (Chambers & Radbourne, 2014). Teachers also noticed that being in outdoor classrooms allowed for cooperation along with longer periods of student engagement, and more space for movement resulting in less conflict (Dennis et al., 2014; Rios & Brewer, 2014).

Learning on school grounds resulted in greater confidence, stronger motivation towards learning, and a greater sense of belonging and responsibility (Dillon et al., 2006). Greenspaces and natural areas helped decrease the severity of attention disorders (Taylor & Kuo, 2006; Wirth & Rosenow, 2012). (Meighan & Rubenstein, 2018)

Environmental Behaviours and Actions

Many studies show that students' **attitudes and awareness** are improved (Drissner et al., 2013; Rios & Brewer, 2014; Chambers & Radbourne, 2014) but few have investigated environmental **behaviours and actions**. Outdoor learning field trips have been shown to foster positive environmental behaviours and attitudes such as negativity towards littering, along with carpooling and riding bikes instead of driving (Farmer et al., 2007).

Similarly, Ballantyne & Packer (2009) found that students' capacity and willingness to act responsibly toward the environment increased after exposure to outdoor learning. (Meighan & Rubenstein, 2018)

Challenges

There is strong evidence that enjoyment and autonomy of choice contribute to improved learning and the application of that learning (Waite and Davis, 2007) but children internalise the messages early on through assessment and teacher instruction, that what happens outside of the classroom does not matter quite as much as what happens inside.

The main reasons for the low prevalence of outdoor learning activities are fitting them into the syllabus and financial arrangements (Fűz, 2018).



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Thank You