

Connecting Students with Nature: An Investigation into Outdoor Education

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Kevin currently teaches Science, Biology and Zoology in a post-primary school. After completing his undergraduate degree in University College Dublin in 2009 with a B. Sc. in zoology, he then completed a Master of Science degree in Biodiversity and Conservation at Trinity College Dublin in 2011. This led to a career in ecology and fieldwork – in particular, ornithological and bat surveying. During this period, Kevin spent vast amounts of time outside in all weather conditions, exploring bogs, woodlands, coastal areas - all of the natural environments that Ireland has to offer. His enthusiasm for the outdoors led him to research outdoor education, noting Ireland's potential for this teaching method and comparing it to methods used in Scandinavia and the United Kingdom. When teaching returns to normal, he hopes to incorporate more classes outside and develop new strategies to teach science and biology with the use of the natural environment.

KEYWORDS: Outdoor Education; Environmental Education; Ireland; Nature Connectedness; Environmental.

INTRODUCTION

Outdoor Education (OE) as a branch of environmental education has the potential to create connections between students, the natural landscape and the flora and fauna found there. Spending time outdoors is deeply rooted in Scandinavian culture and as such has been integrated into government policy, including school curriculums. Within the United Kingdom (UK), OE programmes are beginning to link in with the national curriculums and Forest Schools are becoming more prevalent. However, issues can arise as some practitioners, who might not fully understand the roots of the outdoor philosophy, *friluftsliv*, which literally translates to 'free-air-life' (Sandell et. al, 2010) do not navigate cultural differences. Forest Schools in the UK run the

risk of losing the aspects that help create connections between student and environment. OE is relatively new to Ireland, and the country is in a unique position to take advantage of models and tools developed in countries where the practice is long established. With that in mind, this article endeavours to explore the potentials of OE with regard to developing an environmentally aware generation who practice pro-environmental behaviours and have the confidence and problem-solving skills to tackle local and environmental issues. A review of the literature presents rationale for the benefits of OE and its role in identifying student-environment connections, and why implementation in an Irish context must navigate sociocultural differences to be successful. The main objective of this research is to identify the roles OE has in developing connections to nature and promoting pro-environmental attitudes. The second area of research looks to compare OE strategies in Scandinavia (where theories originated) and the UK (20 years of practice), and identify what would work in an Irish context, where OE programmes are beginning to become adopted. Consequently, a key objective of this study is to identify a model or models that could potentially be adapted for use in an Irish context.

CONTEXT

Roger Putnam states that “there can be no progress without risk” (as cited in Knight, 2013, p. 40). Progress for a child is about identifying hazards and dealing with them at increasingly complex levels. As the world faces a series of environmental disasters from climate change, pollution, wildfires, biodiversity and habitat loss to name a few, OE can offer young people an opportunity to take risks, build their resilience, and allow for critical thinking and problem solving (Ampuero et al., 2015, Chambers et al., 2014, Knight, 2013). In different countries, OE plays a role of varying importance. It has been integrated with government policy and school curriculum in Scandinavia. Over the past 27 years in the UK, OE has informed policies, reports and curriculums such as *Curriculum for excellence through outdoor learning* (LTS, 2010) in Scotland, *Learning Outside the Classroom Manifesto* (DfES, 2006), the *SCE Policy: Procedures and Guidance for OE and School Off-site Visits* (DfES, 2005) and *OFSTED: Learning Outside the Classroom* (OFSTED, 2008) in England and the *Foundation Phase Curriculum* (Welsh Government, 2015) and *Further Steps Outdoors: making the most of your outdoor spaces* (Welsh Government, 2014) in Wales. Within Ireland, OE has been applied sparingly within the formal education system. In investigating the potential for OE to develop connections between young people and the natural environment, a notable gap in the literature was identified: the application of environmental and OE within an Irish context. With the recent arrival of Forest Schools to Ireland, this author identifies potential models that could be used in assisting OE

pedagogies in an Irish context as well as ways to reach the environmental objectives that can be achieved.

OE can be defined as “an experiential process of learning by doing ... In outdoor education the emphasis for the subject of learning is placed on RELATIONSHIPS, relationships concerning people and natural resources” (Priest, 1986, p. 13). This means that OE is a method for learning, based on experiences which takes place primarily outdoors, incorporating all six senses and the affective, cognitive and motoric domains of learning. It is based upon relationships between people, society and natural resources. Studies have indicated that the links between actively engaging in environmental education in an outdoor setting can develop a greater empathy and sympathy for the natural environment and allow students to begin to develop an appreciation for their local ‘wild areas’ (Ampuero et al., 2015; Chambers et al., 2014; Cheng et al., 2012; Meighan et al., 2018; White et al., 2018). However, few studies have investigated this link in Ireland. OE in Ireland at present is mainly restricted to Forest Schools, set up under the Irish Forest School Association, with few links to primary and post-primary curriculums. The Department of Education and Skills (DES) in Ireland has no policy on OE in primary or post-primary schools and so this is left for the school to implement. OE is linked with several benefits to the student’s development - intellectual, physical and social (Becker, et al., 2017; Bølling, et al., 2019; Knight, 2013; Louv, 2008; Uhls et al., 2014). These beneficial aspects of OE have been studied extensively in recent literature. However, somewhat less researched, particularly in an Irish context, is the ability to create connections to the natural environment through outdoor experiential learning.

Young people today are growing up in a time of ecological crisis. Carbon dioxide levels passed the symbolic threshold of 400 parts per million (ppm) in 2016 (Jones, 2017) and the current concentration now sits at 412 ppm (Buis, 2019). Climate change is driving ocean acidification, melting glaciers and along with pressures such as hunting and habitat loss, the loss of biodiversity at an unprecedented rate. Research on declining species numbers has led to arguments describing a sixth mass extinction (Ceballos et al., 2015; Naggs, 2007). It is imperative that future generations develop empathy rather than apathy towards the natural environment in order to combat the serious threats that humans face as a society. Research has indicated that using nature in OE “as a context for learning and development of ecological awareness will be increasingly essential in the future challenges of education” (Karppinen, 2012, p. 41).

In Ireland, there have been attempts to integrate outdoor and environmental educational programmes into formal education, but these strategies are in conflict with dominant

educational strategies (O'Malley, 2014). The true benefits of these experiential education programmes are not viewed in Ireland as the programmes occur at irregular intervals, with environmental education mainly confined to the indoor classroom (O'Malley, 2014). Students in early-years education, primary and post-primary, mainly learn about their natural environment with limited to no first-hand experience within the natural environment.

It is worth noting that OE has the potential to allow learning to continue in a safer environment during the Covid-19 pandemic. Maintaining social distancing among students is easier in an open environment. This could be a viable option in Ireland during Spring and Autumn and even Winter with the correct clothing. A review of the literature produced three linked research questions for investigation:

1. What, if any, links are there between OE in school and a student's connection with the environment?
2. How effective is environmental education in an outdoor setting in creating these connections?
3. How have OE programmes been implemented in Scandinavian countries and the UK and how might they be implemented in the Irish school system?

METHODOLOGY

A systematic review was chosen to investigate the literature available in Ireland in relation to the three research questions. The selected literature was then compared to similar school systems in the UK as well as school systems which have OE well integrated into the curriculum, school culture and lifestyle philosophy. Systematic reviews are a literary review that use systematic searches to collect and analyse secondary data in order to assess their quality and answer a defined research question (Armstrong et al., 2011).

The literature review identified three research questions for further investigation. The next stage of the systematic review process determined the inclusion and exclusion criteria in order to remove irrelevant studies from the systematic search and reduce bias (Armstrong et al., 2011). The aim of developing the inclusion criteria is to ensure that all relevant studies are identified and incorporated into the review (Gough, et al, 2012). Studies can be excluded due to their relevance, concerns on the quality of the study or its reliability (Weed, 2005). Studies that did not align with the inclusion criteria were excluded. To avoid misinterpretation or translation issues, studies not in English were also excluded. Both quantitative and qualitative studies were included to ensure that relevant articles were not accidentally excluded. Qualitative studies have been embraced in systematic reviews within the area of education (Andrews, 2005). The

inclusion/exclusion criteria are set out in Table 1 below. The search was limited to between 2000 and the present in order to find recent relevant, literature that aligned with current environmental issues, modern school systems and updated curricula. Geographic ranges were selected to reflect the UK's close proximity to Ireland, as well as similar culture; and the outdoor and nature-based philosophies of the Scandinavian countries. Final articles chosen for an in-depth analysis were selected through a stringent systematic process in four phases, detailed in Figure 1. This process revealed six journal articles. However, due to a lack of published peer-reviewed papers linked to the research questions in Ireland, the decision was made to include grey literature within the search terms. This led to a seventh source being included for analysis, an Irish Doctoral dissertation discovered through Google Scholar.

Inclusion Criteria	Exclusion Criteria
Studies focused on the OE and its connection to environmental connectedness and awareness.	Studies investigating the connection between OE and physical and mental wellbeing, behavioural improvements in classroom, social development and improved learning ability.
Studies that focus on the development of empathy and sympathy towards the environment.	Studies that focus on other aspects of outdoor learning as mentioned above.
Studies investigating environmental education in outdoor settings.	Studies investigating environmental education in indoor classrooms.
Studies which are linked with formal education and modern curricula.	Studies on non-formal education facilities and anecdotal outdoor learning.
Studies based on students in Early Years, primary and post-primary schools.	Studies based on students in Higher Education.
Studies based in Ireland, the United Kingdom, Finland, Sweden, Norway, Denmark.	Studies outside of these countries.
Studies focused on real interactions with the natural environment and/or 'wild areas' and wildlife.	Studies with focus on student experiences with pets, captive animals or urban concrete based outdoor spaces.
Peer-reviewed qualitative and quantitative articles published in a peer-reviewed journal or scholarly books.	Articles which have not been peer-reviewed such by private individuals, private companies and local authorities.
Papers published in English.	Papers not published in English.
Papers published between 2000 and 2020.	Papers published before 2000.

Table 1: Inclusion and exclusion criteria developed to identify relevant studies.

It was noted that bias could be introduced by a single researcher, through scanning articles and selecting which are considered to be relevant which has the potential to be subjective. It was therefore important to use reflexivity to identify any potential subjectivity and convert it to an exploration opportunity (Finlay et al., 2003). Inclusion and exclusion criteria were selected well in advance of any database searches, during the development of the research questions (Jørgensen et al., 2006)

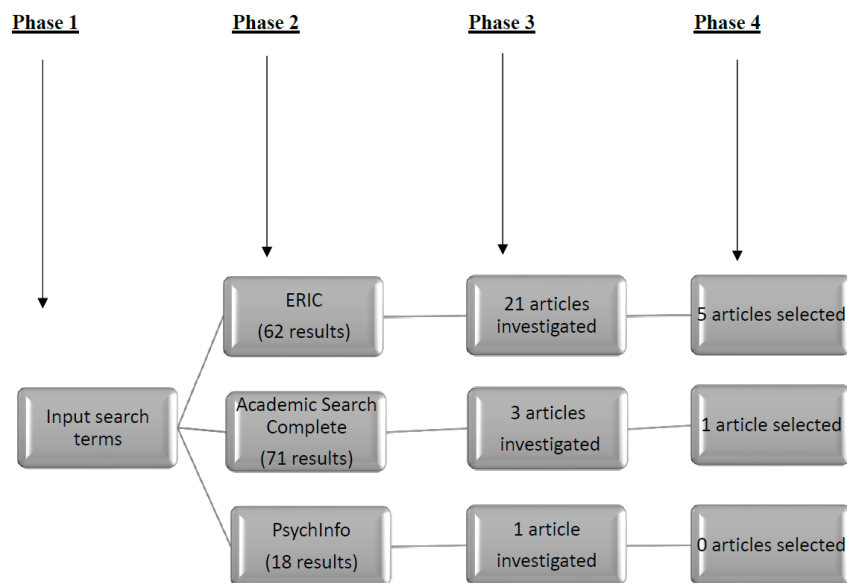


Figure 1: The selection and elimination process (note: many of the 25 articles investigated in phase three overlapped with searches in the three databases; one article selected for analysis was an Irish Doctoral dissertation found through Google Scholar)

FINDINGS AND DISCUSSION

From the systematic review, six articles were selected due to their close links with the research questions (**Error! Not a valid bookmark self-reference.**). One Doctoral dissertation was also included due to its relevance to the research questions in an Irish context. The objective was to complete an analysis and interpretation of the information collected through the systematic review process in an attempt to answer the main research questions. Additionally, this process set out to enhance 1) an understanding of how OE interlinks with environmental education; 2) the role OE plays in developing connections between students and the natural environment, and 3) the role that society and culture play in introducing and implementing successful OE programmes within school curricula.

Ref.	Author	Year	Brief Description
1	Beery	2013	A quantitative study exploring the relationship of environmental connectedness and the Nordic philosophy of <i>friluftsliv</i> with a focus on Sweden. Participants are included through existing data from the Swedish Outdoor Recreation in Change national survey.
2	Leather	2018	This study is a critique of the Forest School movement in the UK. The author compares Forest Schools in the UK to the originators in Scandinavia and investigates the need for navigating cultural differences between different societies, the pedagogy within Forest School and the institutionalisation and commodification of the brand.
3	O'Malley	2014	This study is a doctoral dissertation on environmental education in Ireland and its ability to (re)connect students with the environment. The author details the history of environmental education globally and within Ireland before detailing the voices on environmental education from environmental educators, school staff, parents and the students themselves through 47 semi-structured interviews.
4	Sandell & Öhman	2010	This study investigates the effect of direct encounters with the natural environment within environmental education. It identifies the risks of potentially losing these encounters and suggests new potentials of encounters with nature.
5	Sandell & Öhman	2013	This study outlines an educational tool which critically investigates the relationships between experience of nature and environmentally friendly attitudes and behaviours while examining the ways in which outdoor education can achieve this.
6	Waite, Bølling & Bentsen	2016	A comparative study reviewing the literature of outdoor learning in English Forest Schools and the Danish nature school, <i>udeskole</i> . The authors discuss a conceptual framework to identify sociocultural differences and ways to navigate these to deliver pedagogies that reflect the culture in which they are embedded.
7	White, Eberstein & Scott	2018	This study investigates the benefits of children interacting with nature through a long term "bird buddies" (bird watching) project in England. The study involved 200 participants (aged 7-10) across eight primary schools.

Table 2: Descriptive characteristics of selected studies

Through a detailed analysis, three observations emerged from the literature in relation to the research questions:

1. Numerous researchers in the area of environmental education and OE work on the presumption that children are more disconnected from the natural environment than previous generations without actually examining this level of disconnectedness. The assumption is that connections can be remade just by bringing a student outdoors, even in the short term. O'Malley (2014) noted that in order for connections with the natural environment to be made and retained, it is crucial for environmental and outdoor education to go hand-in-hand. Surveys of environmental educators in Ireland indicated that they believe that for a nature connection to be made the two must be linked, with environmental education being taught through OE. Research has shown that knowledge can facilitate a change in behaviour and attitude, "...people care

about what they know” (Balmford et al., 2002, as cited in White et al., 2018, p. 16). The idea of environmental and outdoor education working together is exemplified by the long-term “Bird Buddies” programme. This study increased student knowledge of local bird populations using bird watching as a potential tool to combat the “extinction of experience” between urban children and the natural world (White et al., 2018). Direct encounters with nature, be through landscapes or wildlife, OE or visiting the outdoors with family, does have a significant, meaningful relationship with environmental connectedness (Beery, 2013; O'Malley, 2014; Sandell et al., 2010; White et al., 2018). However, repetitive, prolonged exposure to the outdoors is essential in deepening that connection, creating environmental empathy, pro-environmental attitudes and a broader, deeper context for sustainability decisions and debate in adulthood (O'Malley, 2014; Sandell et al., 2010; White et al., 2018).

2. Society and culture play a determining role in the effectiveness of outdoor educational programmes and what successfully works in one country will not necessarily work in another. Spending time in the outdoors is deeply connected with the Scandinavian way of life. *Friluftsliv* is an integral part of Scandinavian sociocultural identity and has been integrated into many institutions including the education systems and government policies. Scandinavian countries, in particular Sweden, Norway and Finland, use the abstract idea of *allemansrätt*, meaning universal access to nature, or freedom to roam. In Sweden, this concept can be traced back as far as the Middle Ages (Beery, 2013) indicating just how deeply rooted it is within their culture. It is a fundamental element of the Nordic relationship with the natural world. In regard to this, the Nordic educational system differs from that of the UK or Ireland. In Denmark, *udeskole* comprises of regular outdoor educational activities for school children aged between 7-16. In response to an increased complexity of global environmental issues, Sweden has seen its education system develop a pluralistic approach with sustainability and environmental issues seen as political problems (Sandell et al., 2010). The aim is to develop students' critical thought on different perspectives and create a desire to engage in democratic discussions. For younger children, the *Skogsmulle* program was developed, whereby a forest being, named *Skogsmulle*, leads the children on outdoor adventures based on their explorative curiosity and love of nature (Beery, 2013). Another OE model ‘*Ur och Skur*’ (rain or shine) is implemented by other schools which teaches the importance of nature in everyday life (Beery, 2013). Sweden and Finland also have free standing Nature Schools which aim to use the natural environment to shape ecological knowledge and engagement with nature. Schools within these Scandinavian countries can link up with Nature Schools for their students to learn about the natural environment. However, teachers have a high level of autonomy and are trusted in the professional expertise to use

personal pedagogies to support the outdoor learning sections of their respective curriculums (Beery, 2013).

The 'Forest School' in the UK has stemmed from Scandinavian philosophies. With the general public becoming more aware of environmental issues and with a recent increased focus on reconnecting children with nature, the Forest School brand in the UK is becoming more popular. The aim of these schools is to follow the Scandinavian model of *friluftsliv* to achieve this reconnection. Unfortunately, the Forest School brand fails to consider the sociocultural differences between the imbedded, interwoven outdoor Scandinavian culture and the culture of schools, teachers and the public of the UK. Researchers note that outdoor learning provides learner-centred education where the social and environmental context play a significant role (Waite et al., 2016). Analysis of Forest Schools have provided underwhelming results with the potential benefits to environmental connections stated clearly but lacking any definition as to why certain activities are undertaken and no system to measure the statements (Leather, 2018; Waite et al., 2016). While links between pedagogies of Forest Schools in the UK and the national curriculum remain unclear, those of Denmark, Finland, Sweden and Norway are discussed in detail in the curriculum focusing on *ad hoc* experiential learning in outdoor and green environments (Waite et al., 2016). Research has shown that as the outdoor environment is not a central feature of British cultural identity, some teachers may find the idea of working outdoors with children distressing and something to loathe (Leather, 2018). Some teachers find it difficult not to interfere with child-initiated play, interrupting consistently and distracting from the child-centred learning (Leather, 2018). OE outside of Forest Schools in the UK is minimal and teachers have less autonomy than their Scandinavian colleagues, adhering closely to the national curriculum with a focus on learning outcomes and exam results.

3. The barriers to effective OE in relation to creating an environmentally aware student include external influences such as parental and teacher views and values, government legislation and policy, national curriculum, and society. OE is sparse in the Irish school system. The Department of Education and Skills published *The National Strategy of Education for Sustainable Development in Ireland, 2014-2020*, however, this document fails to identify the potentials of OE as an educational tool for sustainable development (DES, 2014). At present there is no policy on OE set by the Department of Education and Skills. The decision to take classes outdoors rests with the schools and teachers' personal values and teaching strategies. With the exception of the Leaving Certificate Biology and Geography, outdoor classes are near absent in the post-primary curriculum. In primary schools it has been introduced through the development of social, environmental, and scientific education (SESE) which incorporates

environmental education both inside and outside of the classroom. However, a report by the National Council for Curriculum Assessment (NCCA) states that out of 906 schools only five per cent engaged in OE (NCCA, 2008). As the curriculum is saturated with literature, teachers are under pressure to complete the curriculum within the academic year.

CONCLUSION

Forest Schools in Ireland are relatively new and without careful consideration for culture and pedagogical methods; consequently, Irish Forest Schools could begin to move towards an institutionalised model which loses sight of its roots. The area of OE in Ireland finds itself in a unique position as it can incorporate the research conducted within Scandinavia and the UK and apply the most relevant areas of it to an Irish context. Waite et al. (2016) discusses a conceptual framework for OE which incorporates cultural values and educational models from different nations. It can be argued that such a framework would be massively beneficial for a new model of OE in an Irish context. The development and implementation of a standardised Outdoor and Environmental Education Network would allow researchers and educators to communicate and discuss pedagogical methods and strategies together. This would maximise the multiple benefits of learning in the outdoors while navigating cultural differences which would be invaluable not only to Ireland but to other countries where OE is becoming more popular. Ireland is in a unique position in that there is an absence of any official OE or environmental education policies. Continuous Professional Development for teachers interested in OE should be provided and the primary school curriculum could be updated with new links to environmental and OE, giving teachers new methods of teaching old subjects and the confidence to bring classes outside. For a standardised organisation to work, environmental education and OE would need to have clearly defined aims and objectives with clear links to the concepts of sustainability.

The low number of published articles on OE in Ireland is indicative of how unused this educational resource is. Outdoor learning is a valuable tool in education and should be utilised as such for all previously mentioned benefits. This author would recommend that future investigation into the area of OE as a means of developing connection with the natural environment, pro-environmental attitudes and behaviours, should focus on empirical studies of Forest Schools and schools which have begun to implement forms out OE as part of their regular routine. The investigation of gender differences in the development of environmental empathy and awareness was beyond the scope of this study, however, previous studies have shown significant gender differences in attitudes towards the environment (Jenkins et al., 2006; Musitu-Ferrer et al., 2019) and this aspect could be explored with greater depth.

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