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Outdoor learning on the edge of Europe: a systematic review of practice from Ireland

Tomás Aylward [a,b], Maura Coulter [b] and Tom Farrelly [a]

[a]School of Health & Social Sciences, Munster Technological University, Kerry Campus, Ireland; [b]School of Arts Education and Movement, Institute of Education, Dublin City University, Dublin, Ireland

ABSTRACT

Outdoor Learning (OL) programmes are a small but impactful part of the Irish educational landscape. This paper presents an overview of the sector through a systematic review of the literature published between 2012 and 2023. The research had three aims: to 1) map the strands of practice where OL-related research is happening; 2) synthesise the reported outcomes and 3) indicate gaps in the research. Of the 157 papers screened, 13 met the criteria for inclusion. A hybrid method of review based on reflexive and meta-aggregative synthesis was utilised. Eleven lines-of-action findings were identified across four areas-of-action. These areas were: the role and function of schools and organisations; the professional educator; the flourishing of learners in the outdoors; and challenges to and development of the field. Research reported from post-primary and further education sectors presented a significant gap. Undertaking a large-scale quantitative study of the OL sector would complement existing research.

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Outdoor learning; systematic review; reflexivity; meta-aggregation; lines-of-action

1. Introduction

Ireland's landscapes and seascapes have been a location for teaching, learning and adventure training activities since the mid-1960s (Hannon, 2018; Pierce, 2020). The organic and varied development of these educational activities has been through several periods of rapid growth, interspaced with periods of more lateral expansion in response to the country's changing training and education landscape (Pierce & Telford, 2023). From the first seeds of an outdoor education (OE) curriculum in Ballyfermot Vocational School in the mid-1960s (Trant, 2007), outdoor learning (OL) activities have developed across several domains in training and education.

Internationally, the nomenclature associated with teaching, learning, training and education in outdoor environments is contested (Knapp, 2013; Smith & Walsh, 2019). Here in Ireland, several terms are commonly used including Outdoor Learning (OL), Outdoor Education (OE), Outdoor Adventure Activities (OAA) and Adventure Education (AE). Often these terms are based upon the interpretation of the organisations or pedagogues delivering programmes rather than having a consistent link to the education activities being undertaken (Pierce, 2020). In Scotland, educators advising on outdoor learning strategies regularly switch between the terms OE and OL when guiding teachers to improve their practice (SAPOE, 2023). Quay and Seaman (2013) identified that OE/OL can be considered to be either a curriculum or a form of pedagogy. Many assumptions go unchallenged in these definitions, not least that they are almost exclusively developed in Western, Educated, Industrialised, Rich and Democratic (*WEIRD)* societies (Henrich et al., 2010). In an effort *not* to develop a further term or

CONTACT Tomás Aylward tomas.aylward@mtu.ie Munster Technological University, Kerry Campus, Ireland

definition, in this paper, our concept of what is and is not OL was most closely aligned with Beames et al. (2023). They identified OL as involving many kinds of rich learning which (generally) happen outdoors, and which are specifically linked to a curriculum; be that early years, primary, post-primary or tertiary. We understand that these OL activities will have clearly articulated aims and specific learning outcomes.

In Irish OL, we see examples of teaching practices in some early childhood education and care (ECEC) settings (Abbott & Flynn, 2022); in primary education (Usher, 2022); in post-primary schools (Hunt, 2021); in further education and training (FET) colleges (Hannon & O'Callaghan, 2021) and in higher education (HE) (Aylward, 2022). We also find examples of OL teaching practices in non-formal education settings such as residential programmes for lower secondary students, environmental stewardship/education programmes and in youth work. While some of these programmes might not meet all of the criteria in the definition of OL by Beames et al. (2023), the providers of the programmes and the participants would identify these activities as OL. Outdoor Learning as non-formal education for the purposes of Personal and Social Development (PSD) would appear to be the most frequent form of state-funded interventions and programmes in this country (ETBI, 2022; Pierce, 2020). It is also the predominant function of privately-owned outdoor centres and among independent instructors who work in the field of outdoor adventure activities. This is not surprising as our nearest neighbour, the UK, shows a similar predominance to much of the OL provision in that jurisdiction (Beames et al., 2019; Festeu & Humberstone, 2006; Nicol, 2002; Westphal, 2011). There is some irony in this, as the position of PSD in British OE has been viewed as reflective of Victorian values of *character-building* as well as imperialist and militaristic concepts of conquest and hierarchy (Beames et al., 2019; Loynes, 2007). This contrasts with the concept of military neutrality and post-colonial statehood in modern Ireland. Some outdoor educators have strong feelings about the inherent positive impact and the value of OL which would be reflective of McDonald's stance: 'We don't need independent research to prove the value of outdoor education; we believe in it' (McDonald, 1997, p. 377). However, this review is focused on what we know about OL practice from the published literature based upon empirical research in Ireland.

This study adopted a systematic review of literature informed by Grant and Booth (2009) to better understand the nature of OL in Ireland. The purpose of this review was to identify which areas are being researched, and in particular, how OL practices are being enacted in formal education settings. This review also identified significant gaps in research activities and explored which aspects of OL in Ireland have not yet been reported in the academic literature. For clarity, this review is set in Ireland (sometimes described as the Republic of Ireland) and does not include research specific to Northern Ireland, which for education purposes is under a different jurisdiction.

2. Context

2.1. Outdoor learning

While learning indoors is the norm in most educational settings, the outdoors has been the traditional venue for learning throughout the majority of human history (Mann et al., 2021). Outdoor Learning holds a central position in the education frameworks of a number of countries and states including Scotland (Christie et al., 2019); Singapore (Ho, 2011); and Slovenia (Dimec & Kokalj, 2018). In many other countries, OL is referred to in primary and post-primary school curricula and guidance notes for teachers, but it is rarely articulated as the preferred pedagogical approach. Outdoor Learning is often perceived to be on the periphery of teaching and learning practice. While many progressive curriculum changes have taken place in Ireland in the past quarter century (Gleeson, 2022), using outdoor

settings as a structured element of teaching and learning has yet to be fully established (O'Malley & Pierce, 2023). Weak connections between society and the landscape (Hannon, 2015; Lysaght, 1998) and the under-development of place-based educational strategies (Pierce & Telford, 2023) would appear to have created an environment that, perhaps, has provided little encouragement of outdoor pedagogies as a strategy in curriculum design or for curriculum delivery.

Research outputs and publications in any discipline are often mediated by the existence of a large community of researchers and academics from that discipline. In Ireland, there is no dedicated research centre for OL as might be seen in countries or territories such as Denmark (the Outdoor Pedagogy research centre at VAR University), Quebec (the CRÉPA research centre at Université de Sherbrooke) or Singapore (OE department in the MoE). Undergraduate and taught postgraduate degrees in this discipline are available from just two Irish universities with a small number of academics teaching individual OL modules and researching in this domain at these and other universities. While international evidence supports the impact and value of OL in the curriculum and in teaching (Beames et al., 2023; Largo-Wight et al., 2018; Mann et al., 2022), the case for its consistent application in Ireland has not yet been established.

2.2. Rationale and aims

In the face of many claims made for the efficacy of OL in international settings, and in the absence of a large body of research on OL in Ireland, this paper sets out to provide an overview of reported teaching practice in the OL domain. The research had three aims. It aimed to 1) identify the specific sectors represented in OL-related research; 2) synthesise the outcomes that are reported in the academic literature and 3) indicate where gaps in the research were found. While these research aims formed the foundations of our research, we were cautious of taking an overly proceduralist approach. We adopted the stance of Eakin and Mykhalovskiy (2003) by interpreting the aims and research questions as a 'compass' that gave direction to our review rather than an 'anchor' which fixed the position of our research (p.190).

3. Methodology and methods

Reviews of literature have traditionally followed the scientific method of inquiry and can help in the construction of conceptual representations of phenomena or practices (Snyder, 2019). However, more recent approaches to literature reviews have moved towards the use of criteria to establish the rigour of the methods used and create a capacity for those studies to be more easily replicated, expanded or compared to other research (Butler et al., 2016). This more systematic approach to literature reviews is often delineated through the use of protocols, clearly defined parameters, and well-articulated criteria for inclusion in the studies and exclusion from the studies (Newman & Gough, 2020). This study has adopted a systematic review of literature approach (Grant & Booth, 2009) to better understand the nature of OL in Ireland as it is reported in the academic literature. It embraces many aspects of the PRISMA 2020 reporting guidelines (Page et al., 2021) designed to improve the quality of systematic reviews and thus make them more coherent and comparable in the context of similar research set in other contexts or other geographic regions. While systematic review as a research methodology was originally developed in the context of the meta-analysis of large quantitative studies, this form of methodology has been expanded to report on research which uses mixed methods (Dixon-Woods et al., 2005) and to comprehensively report upon and analyse research studies which use primarily qualitative methods (Hannes & Lockwood, 2011; Majid & Vanstone, 2018).

3.1. Searching for literature

As a developing discipline within a limited geographical area, OL in Ireland represents a small target for academic literature. Systematic literature reviews with a fixed research question would traditionally use a PICO or SPIDER approach. Cooke et al. (2012) noted that PICO does not perform well with qualitative studies and SPIDER, though better for qualitative studies, shows lower returns of valid papers. Thus, both were dismissed for this particular study. Initial searches of JSTOR; EBSCO*host*/ Academic Search Complete, and *Sage* Journals and Taylor & Francis Online returned small numbers of publications. These searches used key terms with language and date filters (Page et al., 2021). The search terms were 'Ireland' AND 'outdoor learning' OR 'outdoor education' OR 'adventure education' OR 'Outdoor Adventure Education' NOT 'Northern Ireland.' At the commencement of the research, results were filtered for the period 2012 – 2022 and publications in the English language. As the research took some time, the filter was amended to 2012 – 2023 to include more current research. Usher (2022) noted the significant role of practitioner-led research and master's studies in research on the practice of teaching geography in primary schools in Ireland. It was found that, with appropriate filters, Google Scholar was effective in capturing both the grey literature and the peer-reviewed literature during the initial scoping phase of the review, it became the main database for the literature search. A subsequent search using form delivered 1804 results.

3.2. Selection and initial screening processes

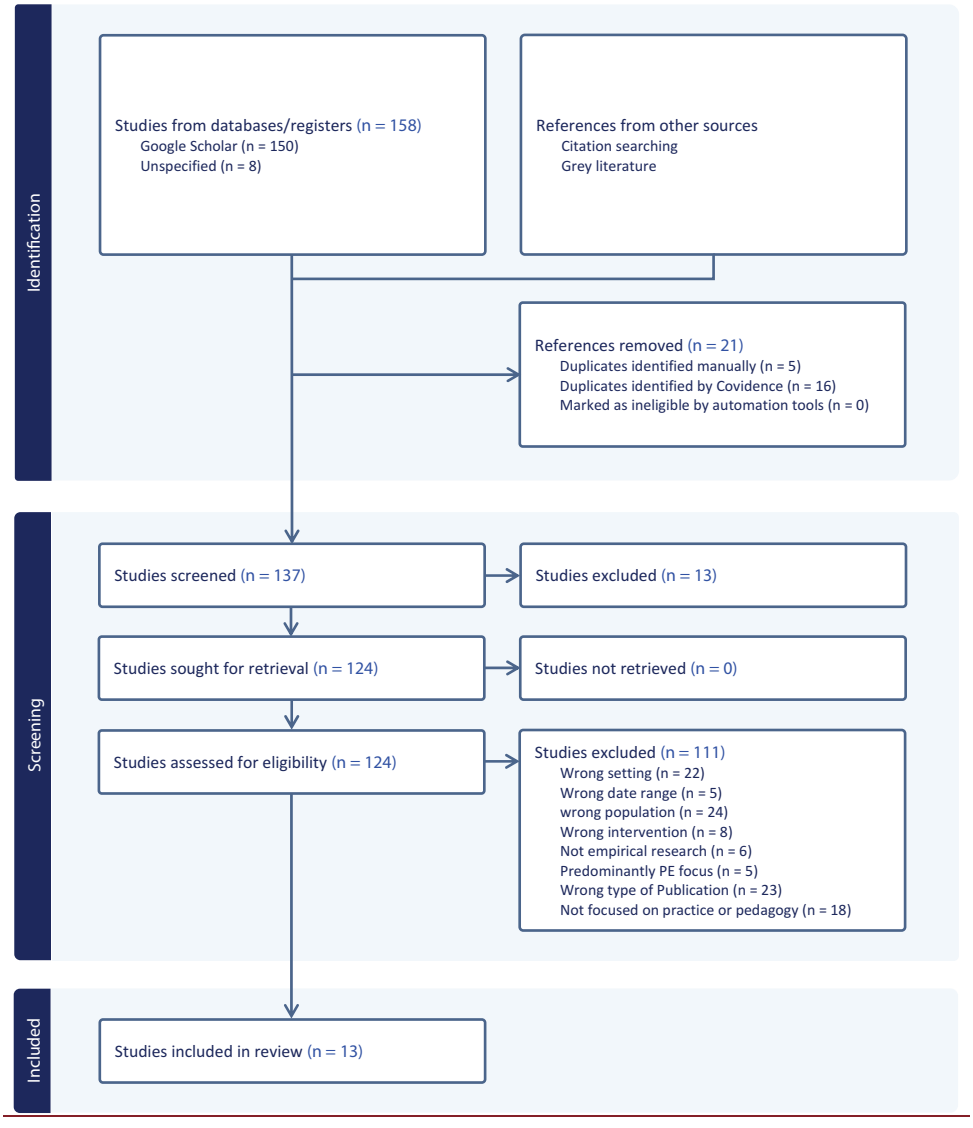
While the Google Scholar search delivered results from practitioner journals, reports and other grey literature, it also included sources which referred to literature less focused on our key terms. This included research activity based in other countries which cited research from Ireland, or which had been published in Ireland. In some cases, it even presented results where an author's surname was

Table 1. Inclusion and exclusion criteria.

Criterion	Inclusion	Exclusion
Forms of Education	Formal education Non-formal education	Informal education
Educational Setting	ECEC Primary Education Post-primary Further Education Higher Education Environmental outdoor education	
Focus within OL	Focus on professional practice Focus on pedagogy or teaching	Focus on student programmes Focus on student learning Focus on student attitudes
Non-formal Outdoor Ed. or Adventure Ed.	Residential centre-based Environmental outdoor education Youth work settings	Wellbeing outdoors Forest school settings Adventure Therapy Youth Justice work
Sports and recreation settings	Adventure education or adventure activities within physical education	Sport/Sport development related Sports-science related research Outdoor recreation research based predominantly on Physical Education
Date of publication	2012–2023	<2012
Territorial	Research on subjects/phenomena located in Ireland	Research on subjects/phenomena located in Northern Ireland and off the island of Ireland
Document Sources	Peer-reviewed papers in academic journals Book sections or chapters in academic books	Magazines and practitioner journals Governmental and NGO reports Master's and PhD theses Undergraduate research Newspaper articles
Content type	Reporting of empirical research	Handbooks; practice guides; conceptual pieces; literature reviews

Table 2. PRISMA.

Outdoor Learning on the edge of Europe: a systematic review of practice from Ireland – PRISMA



Ireland. Initial screening of the titles and abstracts allowed for the data set to be reduced to 157 documents for processing. Documents which remained after screening were managed using Zotero (Vers. 6) to capture their full details.

3.3. Inclusion and exclusion criteria

Criteria were established for the inclusion of research papers and documents as well as criteria for exclusion (See Table 1). As a discipline with many terms or titles used to describe teaching practice surrounding learning in the outdoors, it was necessary to make some decisions to narrow the scope of the study and create a stronger focus for the review guided by the aims. While grey literature was

identified in the initial scoping searches the final inclusion criteria were refined to include only empirical peer-reviewed academic journals and book chapters. The scope of practices which might be considered to be OL is very broad in Ireland. In order to pay closer attention to situations where OL is defined within formal and non-formal education settings (Council of Europe, 2025), research related to informal education settings where the learning is unstructured in its delivery or without a fixed learning outcome (Festeu & Humberstone, 2006; Jeffs, 2017) were excluded. Thus, outdoor recreation programmes and youth justice programmes were not included in this review. While Forest Schools branded OL activities are practised both in formal education settings and non-formal settings (Whelan & Kelly, 2023) they require external accreditation and therefore this approach is not immediately open to all teachers and practitioners. Thus Forest School-based research was not included in this review.

3.4. Full-text screening and data extraction

Covidence software (https://www.covidence.org/) was used in this review to track the systematic screening of literature and the rationale for the inclusion and exclusion of each text. It provided an effective audit trail of the decision-making processes in our research and a method for tracking progress through the review. Thirteen papers and book chapters were selected for inclusion in the study. The screening process followed in this research was captured in a PRISMA table (Table 2).

3.5. Quality appraisal

This review involved both analysis and synthesis activities. We evaluated the standard of the reporting of the qualitative and mixed methods studies using a tool developed by Maeda et al. (2022). Their 22-point inventory was used to establish if all the significant elements of the qualitative research methodology undertaken were reported in each publication. For each component sought by the inventory in the research paper/chapter, verbatim evidence was extracted. For quantitative research, we chose to use the *Child Care and Early Education Research Connections* (CCEERC) Research Assessment Tool (Child Care and Early Education Research Connections, 2023). This was the tool chosen by Becker et al. (2017) in their systematic review of literature on the effects of regular classes in OE. The 12-point inventory was graded in the same manner as the qualitative research with positive, neutral and negative scores. The adjectival description of the quality used the same metric as the assessment of qualitative research.

3.6. Hybrid synthesis method

An important aspect of systematic review is choosing an appropriate technique for the synthesis of research reports. In particular, the interpretation of qualitative research is a subjective process and the acknowledgement of the conceptual frameworks and context of each of the research studies are key (Barnett-Page & Thomas, 2009; Lisiecka et al., 2022). This makes the comparison or synthesis of such research outputs challenging. As this review involved predominantly qualitative research with only one quantitative study included, we chose to adopt a novel hybridised approach to our analysis. As three researchers who are very invested in reflexive approaches to qualitative research (Braun & Clarke, 2019, 2023), we employed thematic synthesis (J. Thomas & Harden, 2008) in the initial phases of analysis to identify commonalities. This involved line-by-line coding and the construction of several phases of interpretation (Braun & Clarke, 2021). The process of Meta-aggregative synthesis (Munn et al., 2021) was selected as the primary method used to communicate the combined findings from the selected studies (Barnett-Page & Thomas, 2009). Meta-aggregation was developed as an analysis method for qualitative systematic reviews which would replicate the rigor of quantitative studies. In the latter stages of the review, we applied this interpretive strategy based upon the work of Hannes and Lockwood (2011) to derive areas-of-action and the final interpretation as lines-of-

Table 3. Extraction #1.

Title	Year	Author	Form of OL	Setting	Research Method	Sample size
Primary teachers' experience of a physical education professional development programme	2012	Coulter, M. and Woods, C.	Curricular outdoor learning	Primary Education P. D./Teacher Education	Qualitative: Self-Study	808
Outdoor Learning and Student Teacher Identity	2015	Kelly, O.	Curricular outdoor learning	Higher Education and primary schools	Qualitative: Case Study	9
I know when I did it, I got frustrated' : The Influence of 'Living' a Curriculum for Preservice Teachers	2016	Dillon, M., Tannehill, D. and O'Sullivan, M.	Curricular outdoor learning	Teacher Education	Qualitative: Case Study	14
PROMOTING SOCIAL INCLUSION AND PHYSICAL ACTIVITY FOR STUDENTS WITH SPECIAL EDUCATIONAL NEEDS THROUGH ADVENTURE EDUCATION	2017	Tindall, D., Neylon, J., Parker, M. and Tannehill, D.	Adventure Education	Post-Primary Special Education	Qualitative: Case Study	10
Leave no one behind: Using flow learning to increase outdoor recreation opportunities for people of all abilities	2017	Leo, J., Mourton, N.-E., Mustafa, H. and O'connor, A.	Adventure Education	Vocational Education for young adults with I.D.	Qualitative: Case Study	5
Ocean Literacy and Youth: Integrating a Place Based SDG 14 Intervention into Irish Secondary School Curriculum	2021	Hunt, L.	Environmental Education	Post-Primary Education	Mixed Methods: evaluation of an intervention	67
How is geography taught in Irish primary schools? A large scale nationwide study	2022	Usher, J.	Curricular Outdoor Learning	Primary Education	Quantitative: Survey	1,013
Outdoor education, interaction and reflection: a study of Irish outdoor ECEC	2022	Abbott, K. and Flynn, S.	Early Years Outdoor Learning	Early Years Education	Qualitative: Interviews	7
Universal Design for Learning-A framework for inclusion in Outdoor Learning	2022	Kelly, O., Buckley, K., Lieberman, L.J. and Arndt, K.	Curricular outdoor learning	Primary Education	Qualitative: Case Study	4
Being well:' the master key to unlocking competencies? How outdoor and adventure activities contribute to the development of children within a competency-based curriculum	2022	Finnerty, C. and Murphy, F.	Curricular outdoor learning	Primary Education and Teacher Education	Qualitative: Case Study	4
Where's the E in OE? The McDonaldization of Irish outdoor education	2022	Pierce, J. and Beames, S.	Adventure Education	Public Provision Outdoor Education	Qualitative: Ethno-case Study	15
Making evaluation work for the practitioner evaluator: experience from the field of environmental education	2022	Bird, Á., Fahy, F. and Reilly, K.	Environmental Education	Schools and Community groups	Mixed Methods: evaluation of an intervention	26,265
An outdoor educator's self-study of enacting a pedagogical model for outdoor adventure education to facilitate affective learning experiences	2023	O'Carroll, C. and Scanlon, D.	Adventure Education	Public Provision Outdoor Education	Qualitative: Self-Study	1

Table 4. Extraction #2 Principal findings.

Study ID	Findings#1	Findings#2	Findings#3	Findings#4
O'Carroll and Scanlon (2023)	The importance of creating an environment where affective learning can occur	The potential of the pedagogical model for the creation of an environment where affective learning can be facilitated		
Finnerty and Murphy (2023)	Theme 1: The child and the teacher	Theme 2: Linking learning in OAA to key competencies. All participants identified resilience as a trait paramount for children to thrive throughout their lives to 'learn to deal with the adverse, the lack of success and the failures' and how carefully planned OAA can be used to promote resilience. Links between these cognitive and affective domains and two further key competencies: 'Learning to be a learner' and 'Being creative' were made by participants.	OAA is 'more aimed at the affective domain and even the cognitive domain more so than the physical domain,' the latter being more traditionally associated with physical education.	Supporting teaching and learning of OAA in a redeveloped curriculum: Paricipants in the study believed that in order for OAA to become a consistent part of PE programmes in the redeveloped curriculum, teachers must understand its value and feel confident in their ability to teach it.
Dillon et al. (2016)	Meaningful Direct Experience .PSTs indicated that learning through an experiential learning approach during teacher education provided a base by which to judge the suitability and appropriateness of activities for the students they were teaching	Expectations of Students . . ..The problem-solving nature of OAE tasks affords many ways of completing tasks, and this ambiguity proved challenging for PSTs, especially when looking at their narrow range of expectations they held for how students might complete a task.	Physical Activity and Competition. . .. Despite the non-competitive approach PSTs taught OAE through competitive activities encouraging high levels of physical activity in order to complete an activity faster than others, and win. Many believed OAE did not afford a high enough level of physical activity for their students	
Tindall et al. (2017)	Introducing students with SEN (specifically ASD) to elements of adventure education resulted in a slow but noticeable increase in their social skills and overall interactions with others, both within and outside the educational setting.	Students demonstrated improvement in key social skills, such as eye contact, as well as the initiation of social interaction and understanding the perspectives of others during various activities.	Integrating a theoretical perspective (constructivism) with an immediate and prolonged practical experience (adventure education). In this controlled and structured environment, students with SEN were able to develop a deeper understanding of how to engage others through the adventure education curriculum model.	In this case study, through this a 'lived' learning experience, the unknown became known as students were able to create meaning through decision-making, critical thinking, and problem-solving.

(*Continued*)

Table 4. (Continued).

Study ID	Findings#1	Findings#2	Findings#3	Findings#4
Coulter and Woods (2012)	Theme #1: Resources and materials and modelling: The simple provision of externally generated resources did not convert into teachers understanding how to teach from these resources, nor how to constructively critique the resources. By listening to the facilitator explain exactly what she is doing and thinking as she models the skill, the apprentice (teacher) can identify relevant behaviours and develop a conceptual model of the component processes involved. Teachers role-playing being children in both pre and in-service PD learnt the sequence of the activities from the perspective of the student as well as the teacher.	Theme#2: Knowledge: In this study, the process of discussion which occurred during the interviews with teachers was identified as a chance to reflect and consolidate on the knowledge provided during the PE-PDP. Teachers commented that these were the first and only times they, as a group, discussed and questioned practise in physical education (FN).	Theme#3: Children and O&AA: This change in the social dynamic of physical education lesson as the O&AA programme progressed was also noted by the teacher. Children who may have been on the periphery of groups during games were now coming into their own. Both children and teachers commented that girls who would not normally take part in physical education were now taking part and for the duration of the PDP, not one child opted out.	Theme #4: Physical Education; the bigger picture: The teachers' and children's past experiences of physical education were very strong, and for some difficult to change. Teachers and children too might not have understood that O&AA was physical education as it was so far removed from what they were used to.
Bird et al. (2022)	The importance of evaluation in the context of environmental education	Keeping it active:-The importance of programmes employing active, inquiry-based learning methodologies	Having fun while learning	Changing views and desire for action
Usher (2022)	With a mean of 3.94, (on a 5-point Likert scale) geography was ranked joint 5th alongside physical education and Irish pertaining to teachers' self-reported confidence in teaching representing 'somewhat confident' and 'fairly confident'	49.5% of respondents teach geography for over one hour per week while 39% teach it for less than one hour per week. 10.2% of teachers were found to not teach geography every week even though they are mandated to do so.	The Local Area was found to be the second most important area of the PGC after Environmental Awareness	This inconsistent use of child-centred, experiential methods in the teaching of primary geography is consistent with other research in the RoI such as the qualitative findings of Pike (2011) and Cummins (2010) as well as research on student primary teachers' memories (Dolan et al., 2014).
Leo et al. (2018)	#1. Increasing access to the outdoors could have a positive impact for people with disabilities on a global level leading to the year 2030, as organizations work towards building a more inclusive society.	#2. Given the potential for increasing access and participation, we recommend further research to examine the role of measuring the progress of a global tool that would be used to advocate the specific SDG goals and targets.	#3.The alignment of Flow Learning and outdoor education with the discussed Sustainable Development Goals, shows the effect and contribution that outdoor education can have on sustainable development.	

(*Continued*)

Table 4. (Continued).

Study ID	Findings#1	Findings#2	Findings#3	Findings#4
Kelly (2022)	#1.This case study offers a brief snapshot into the complexities of developing student teachers' professional identity to include outdoor and place-based learning as a staple of their teaching toolkit.	#2. Initial teacher education programmes are excellent at supporting pre-service teachers' professional development in the context of traditional classroom-based teaching and learning, with some opportunities for exploring opportunities for outdoor learning.	#3. Overall, the student teachers who took part in this project were confident to embrace outdoor learning in their future teaching, though recognised school and policy factors that may be a barrier to this.	#4. The case study highlights the importance of outdoor learning being promoted not just within specific subject areas but as a pedagogy for learning across the curriculum.
Hunt (2021)	Students enjoyed both group work and individual work but mostly mentioned group work as being enjoyable.	Opportunities for outdoor time in a lesson was mentioned by a high number of students as enjoyable.	the value in place-based learning and understanding their place in turn helping students to respect their place.	Place-based learning is important in connecting with real-world authentic situations, the outdoor educational way of working means learning that is connected to authentic situations and learning environments.
Pierce and Beames (2022)	There are highly McDonaldized practices in Irish outdoor education, replete with prescriptive sessions.	Few, if any, links to curricular learning or measurable gain for students beyond taking part in entertaining activities that take place outdoors.	Some of the experiences have been classed as a form of staged 'adventuretainment' that ignores 'place' (natural environment), subject (ecological processes) and reason.	We suggest that the first step in the process of change will be for the sector as a whole to accept that Irish outdoor education is in a poor state.
Abbott and Flynn (2022)	Reflective practice was identified as playing an important role in the construction of quality interactions.	Despite the National Quality Framework emphasizing the importance of reflective practice within professional development, funding is not available to ECEC providers to pay staff for non-contact time.		

Table 5. Reporting quality assessment.

Study ID code	Mean	Std. Dev.	Initial Interrater reliability	Level of concensus after discussion
	Mean I-R-R		82%	95%
Abbott and Flynn (2022)	0.00	0.98	86%	95%
Bird et al. (2022)	0.50	0.74	82%	100%
Coulter and Woods, (2012)	0.64	0.66	55%	91%
Dillon (2016)	0.82	0.50	86%	100%
Finnerty and Murphy (2023)	0.27	0.88	68%	82%
Hunt (2021)	-0.05	0.84	73%	95%
Kelly (2022)	0.14	0.94	91%	100%
Kelly et al. (2022)	-0.32	0.95	91%	95%
Leo et al. (2018)	-0.18	0.96	95%	100%
O'Carroll and Scanlon (2023)	0.86	0.47	91%	95%
Peirce and Beames (2022)	0.91	0.29	78%	100%
Tindall et al. (2017)	0.00	0.98	91%	91%
Usher (2022)	0.58	0.79	84%	100%

Table 6. Descriptive themes.

Descriptive Themes from the findings of the reviewed papers
Agency of the learners
Attitudes and Affect
Culture
Future policy
Policy issues
Gaps in research and practice
Pedagogical practices
Reflective Practice
Regulation and organisation
Relationships
Research agenda
The quality of the educator
Theory informed practice

action for research and practice. We followed the example of Dunn et al. (2024) in pragmatically employing Meta-aggregative synthesis in reviewing papers featuring both qualitative and quantitative methods. We chose to take an integrative approach which derived lines-of-action outputs (Hannes & Lockwood, 2011) that maintained a close link to the findings of each research study and their original research context (Lockwood et al., 2015).

4. Findings of the systematic review

4.1. Characteristics of the literature

In order to address the first aim of the research, to map the strands of practice where OL-related research is happening, the following characteristics were extracted from the 13 selected texts; Title, year, author, setting or sector, sample size, form of OL, and research methods used (Table 3). Through the analysis of research-reporting quality assessment, the principal findings from each text were extracted (Table 4). Ten of the studies used qualitative research methods varying from case studies, interviews and self-studies. The median number of participants in these studies was eight. Two of the studies used mixed methods with a range of participants numbering from 67 to 26,265. The latter was a study of data collected over a 10-year period. One study used a quantitative survey with responses from 1,013 primary school teachers.

As previously discussed, OL takes many forms in Ireland. In this review, six of the studies related to primary-level curricular OL with a further four of the studies focused on adventure education. These adventure education programmes took place in post-primary and vocational education for young

Table 7. Areas-of-action.

Areas of Areas-of-action	Description	Reach
The role and function of schools and organisations	The organisational culture, administrative systems and regulation of schools and other educational institutions where outdoor learning takes place.	9 research studies
The professional educator	The attributes of the educator including their capacity to engage in reflective practice. Their Professional Development (PD) experiences and future plans. The extent to which theory informs their practice and what factors determine the quality of the practice.	13 research studies
The flourishing of learners in the outdoors	The agency of the learners and the capacity of the learners to develop and grow through learning relationships. The attitudes and mindset of the learners and how outdoor learning supports growth in their affective domain.	13 research studies
Challenges to and development of the field	The scope of the research agenda is associated with outdoor learning within formal education settings and how future policy-making will direct outdoor learning practice. This also includes the identification of gaps in the research strategic targets for new research in the field.	11 research studies

adults with a disability. The two mixed methods studies were both environmental education programmes. The setting or context of the studies also showed variety in the focus of the studies. Only one study in this review related to early years, This contrasts with the international literature where OL in early years education features strongly. Four studies related to either initial teacher education or continuing teacher education associated with universities and the professional development of primary school teachers. Two of the studies were set in the network of public provision outdoor education and training centres (OETC) funded directly by the Department of Education. The importance of equality, diversity and inclusion (EDI) is the focus of an increasing volume of professional development programmes for teachers and pedagogues working in the education sector. It was positive to see that two of the studies related to supporting the engagement of persons with a disability in OL programmes.

4.2. The quality of research reporting

Utilising the assessment tool by Maeda et al. (2022), each qualitative and mixed methods research paper was evaluated. Where an inventory item was present, it was scored as + 1 (YES). Where an inventory element was absent, it was scored − 1 (NO). Where there was ambiguity, the criteria were scored 0 (UNCLEAR). The mean score and the standard deviation were calculated for each publication. In keeping with Maeda et al.'s work, where the mean score was greater than .66, the paper was deemed to possess a *high level of quality* in its reporting. Where a publication scored .66 < .30, it was deemed to have a *medium level of quality*. Where a publication scored <.3, it was deemed to have a *low level of quality* for the reporting of qualitative research.

One paper selected in the review used a quantitative research method and here we used the CCEERC Quantitative Research Assessment Tool (Child Care and Early Education Research Connections., 2023). This 12-point inventory was graded in the same manner as the qualitative research with positive, neutral and negative scores. The adjectival description of the level of quality reported used the same metric as the assessment of qualitative research.

The 13 papers were evaluated for quality by Author 1. A process of inter-rater reliability was then conducted where Author 3 assessed each paper against the two quality assessment tools. Next, results were compared before discussion and reappraisal. When initially compared, there was an 85% level of agreement between the reviewers. Following discussion and reappraisal, the level of agreement was 95% (Table 5).

4.3. Synthesis of the research data

This analysis process was managed using the NVivo (Ver.14) software package. The 13 research studies were uploaded to NVivo and reviewed line-by-line for details related to their respective findings.

Table 8. Lines-of-action from the findings.

Lines of action	Description	The Areas of Action to which these relate
Developing Outdoor Pedagogy	*If* Outdoor Pedagogy can be acknowledged as a genuine pedagogical model or genre of teaching, *then* ITE and CTE programmes can support teachers and pedagogues more effectively to develop their practice in this domain.	The role and function of schools and organisations The professional educator Challenges to and development of the field
Becoming reflective outdoor teachers and pedagogues	*If* PD and theory-informed practice were valued more by the educational institutions (and schools) *then* the practice/theory divide might be bridged, with teachers and pedagogues more likely to adopt reflective practices.	The role and function of schools and organisations The professional educator Challenges to and development of the field
Theory-informed practice can become more prevalent if more teachers and pedagogues were engaged as researchers or co-researchers with others	*If* more research on outdoor learning practice was happening across the sector with more practitioners being active agents and co-researchers in the investigations, *then* the theory being generated might be more easily adopted into practice by the teachers and pedagogues. This evidence-based practice would be in the best interest of the learners.	The professional educator Challenges to and development of the field The flourishing of learners in the outdoors
Evaluation methodologies need to be applied across the sector to capture good practice and to improve the quality of teaching	There are no universal, structured systems for evaluating outdoor learning programmes reported. Evaluating outdoor learning programmes would improve practice, support research and understanding of the field and provide evidence for institutions about the efficacy of programming.	The role and function of schools and organisations The professional educator Challenges to and development of the field
Active, affective and engaged learning has been reported in Irish outdoor learning	These studies have provided evidence of outdoor pedagogies which have delivered active, affective and engaged learning for participants in the reported programmes.	The flourishing of learners in the outdoors
Local areas and place-based pedagogies should take a more central role in outdoor learning practice	The role of local places and place-based pedagogies should be articulated in policies and in curricula. This would support education for sustainable development and the achievement of the Sustainable Development Goals (SDGs)	The role and function of schools and organisations Challenges to and development of the field The professional educator
PD for outdoor learning needs to be contextualised	*If* more PD programmes were situated in the learning context of ECEC practitioners, teachers and outdoor pedagogues, *then* the professionals would be more confident and better prepared to deliver outdoor learning in those educational settings	The role and function of schools and organisations The professional educator Challenges to and development of the field
The cross-curricular opportunities afforded by outdoor learning should be promoted	Outdoor learning can create affordances for learning across curricula and across thematic areas in formal education. It can also be highly effective in communicating broader pro-social and eco-centric values	The professional educator The role and function of schools and organisations Challenges to and development of the field
Outdoor learning is more impactful in the affective domain of learners	*If* we are seeking to optimise the impact of outdoor learning practices, *then* we should focus on the potential for affective growth and development afforded by outdoor learning and not just the physicality of the experiences.	The flourishing of learners in the outdoors Challenges to and development of the field
There is a need for greater clarity about the nature of outdoor learning and its use as a teaching method	*If* we want to improve practice in outdoor learning among pedagogues and teachers, *then* we could focus on the development of theory and practice concurrently by fostering greater pedagogical content knowledge (PCK).	The professional educator Challenges to and development of the field

(*Continued*)

Table 8. (Continued).

Lines of action	Description	The Areas of Action to which these relate
The use of outdoor learning strategies for children with Special Education Needs and disability (SEND) merits more exploration	Children with SEND have the potential to benefit substantially from the application of outdoor learning practices. The area is not reported extensively and the integration of outdoor learning and Universal Design for Learning (UDL) approaches could have an even greater impact.	The flourishing of learners in the outdoors Challenges to and development of the field

Flemming and Noyes (2021) noted that findings from research papers were generally in the 'Findings' section. However, they also noted that important aspects of the findings are sometimes described and articulated in other parts such as the 'Discussion' section. The coding activity was completed by Author 1. There were 57 findings identified from the 13 studies. After a period of familiarisation with the data (Table 4) and leaning into a reflexive thematic approach (J. Thomas & Harden, 2008), 12 descriptive themes were identified by the authors (Table 6). In the subsequent phase of coding, four analytical themes were developed. These defined the areas-of-action (Ojeda & Del Rey, 2022) identified in the papers. Finally, lines-of-action (p. 1661) were aggregated from the 13 papers by Author 1 and Author 2. As noted by Flemming and Jones (2019), this iterative process of extraction, analysis and synthesis involves moving both backwards and forward in a manner that is not always linear.

4.4. Areas-of-action

The meta-aggregation of findings generated 12 descriptive themes which led to the formation of four distinct areas-of-action. These areas were identified as domains where policy or practice might be changed in order to improve outcomes for the learners, the teachers/pedagogues involved and wider society (Table 7). While this review was primarily focused on the practice of OL by teachers/pedagogues, the first area-of-action acknowledges that this practice is situated in schools and other educational contexts. As such, their institutional policies, procedures and most particularly, their organisational culture, can be an *enabler of practice* or a *disabler of practice*. The second area focuses on the individual practitioner. The findings highlighted areas which influenced their professional capacity and the quality of their practice. The third area identified findings which had a direct relationship to the outcomes for learners. This area included actions which supported the flourishing and personal growth of the learners (Seligman, 2011). The final area-of-action related to challenges in and development of the field of OL.

4.5. Lines-of-action

Meta-aggregated synthesis statements were drawn directly from 57 findings extracted from the papers in this study. These findings were clustered thematically in the four areas of action. The synthesis statements were divided into two formats. They are presented in either a declamatory form or with an *if-then* structure (Hannes & Lockwood, 2011). These statements propose direct action for the advancement of policy or of practice. Each of these 11 lines-of-action are further elucidated with a description and are linked to multiple areas-of-action identified in the findings of the original research papers (Table 8). These lines of action impacted many areas of practice. Here we present them within the context of the area-of-action in which they have most impact. While the individual studies in this review had findings about particular populations and operations, there was a challenge to identify how the voice of individual researchers can be interpreted in the context of

the entire sector. Here we outline the synthesis statements associated with the four areas-of-action in the previous section.

5. Discussion

The lines-of-action identified are each linked to multiple areas-of-action in a rhizomatic fashion, which is reminiscent of Deleuze and Guattari's (1987) concept of the Rhizome which envisages knowledge as a decentralised, non-hierarchical fashion system. For clarity, these lines-of-action are discussed in the context of the four over-arching areas of action identified in this review. The implications of the quality of research reporting are also discussed.

5.1. The role and function of schools and organisations

The practice of OL by teachers/pedagogues is of primary importance in this review, but where they work and how their work is administered have major implications for every individual teacher and pedagogue. Therefore, *the role and function of schools and organisations* is the first area-of-action we address. One aim of this review was to establish gaps in the research of practice. As OL practices occur across many formal and non-formal areas of education in Ireland, they are not routinely and systematically evaluated. While some structured evaluations are reported (Bird et al., 2022; Hunt, 2021), there is a lack of structured programme evaluation (Pierce & Beames, 2022) that could contribute to improved practice and could build an evidence base to support policy change. Evidence from Denmark (Nielsen et al., 2016), the UK (Quibell et al., 2017) and New Zealand (Hill et al., 2020) indicate how this could be approached. Therefore, the first line-of-action statement is that evaluation methodologies need to be applied across the sector to capture good practice and to improve the quality of teaching.

The second line-of-action statement relates to the role of place-based education in OL (Mannion & Lynch, 2015). *Local areas and place-based pedagogies should take a more central role in outdoor learning practice*. The role of local places and place-based pedagogies should be articulated in policies and in curricula. This would support education for sustainable development and the achievement of the Sustainable Development Goals (SDGs), most specifically Goal 3 *Good Health and Wellbeing*; Goal 4 *Quality Education*; Goal 13 *Climate action*; Goal 14 *Life below water*; Goal 15 *Life on land*. The importance of place-based learning and connection to place was reported in several studies (Bird et al., 2022; Kelly, 2022; Usher, 2022). The capacity of this form of learning to connect to broader issues of sustainability was also noted (Hunt, 2021; Leo et al., 2018). However, some OL programming can be overly focused on the physical tasks and activities involved without acknowledging the setting and context of learning in a natural environment. This can lead to what Relph (1976) called *placelessness*. This aspect of OE was noted by Pierce and Beames (2022). As OL programming can be viewed as serving broad themes within the Irish curriculum (Finnerty & Murphy, 2023), increasing the role of 'place' may provide the opportunity to widen the relevance of OL activities across the curriculum.

Several studies in this review were linked to the professional development of teachers, pre-service teachers and practitioners. Their capacity to adopt an outdoor pedagogy was the focus of a number of studies (Abbott & Flynn, 2022; Coulter & Woods, 2012; Dillon et al., 2016; Kelly, 2022). The professional practice of these pedagogues and teachers was also noted in other studies (Pierce & Beames, 2024; Usher, 2022). However, outdoor pedagogy is not a pedagogical model or genre of teaching that exists universally in initial teacher education (ITE) or continuing teacher education (CTE) programmes. Therefore, the third line-of-action from this review relates to developing outdoor pedagogy. *If* outdoor pedagogy can be acknowledged as a genuine pedagogical model or genre of teaching, *then* ITE and CTE programmes can support teachers and pedagogues more effectively to develop their practice in this domain. Other researchers and academics have identified outdoor pedagogy as distinctly different (G. Thomas, 2015) and some have noted how its pedagogical

approach might offer insights into more mainstream education (Blenkinsop et al., 2016). Neville et al. (2023) have proposed such a model for outdoor pedagogy that counters the traditional notions that a teacher or practitioner must first be a highly skilled 'outdoors person' before developing their teaching skills for that domain. Several researchers have drawn on the work of Shulman (1986) to better understand their teaching outdoors through the concept of Pedagogical Content Knowledge (Dyment et al., 2018; North & Dyment, 2021; Sutherland et al., 2016). This emphasis on 'how to teach' a particular concept or skill focuses on the teacher as an expert in teaching that subject outdoors rather than being an expert at being outdoors.

5.2. The professional educator

In the second area-of-action, we identified *the professional educator* as a focus of several synthesised findings. While many findings in this review link to several of the four areas-of-action, we took a reflexive approach in interrogating those findings in order to situate them in the domains where we believe they may be most impactful. *The cross-curricular opportunities afforded by outdoor learning should be promoted*. This declamatory statement is equally relevant to the entire field of OL, but we believe that such a policy decision would have the greatest impact on the work of the professional educators. Several studies in this review identified the opportunities to link to the curriculum and to use OL to deliver cross-curricular or interdisciplinary learning (Finnerty & Murphy, 2023; Kelly, 2022; O'Carroll & Scanlon, 2023; Usher, 2022). This reflects findings internationally where a number of studies have highlighted the opportunities and efficacy of cross-curricular teaching outdoors (Beames et al., 2023; Faskunger et al., 2018; Neville et al., 2023). The next synthesis finding in this area was: *If* professional development and theory-informed practice were valued more by the educational institutions (and schools) *then* the practice/theory divide might be bridged, with teachers and pedagogues more likely to adopt reflective practices. The concept of reflective practices is well-established in a number of professions including teaching and nursing. Schön (1983) referred to reflection on practice, in practice and for practice in teaching. Reflecting on practice and activities such as journaling about one's teaching featured in several papers from this review (Abbott & Flynn, 2022; Bird et al., 2022; Dillon et al., 2016; Kelly, 2022; O'Carroll & Scanlon, 2023).

In a field where definitions of what constitutes theory and appropriate practice are contested, reflective practice creates an opportunity for practitioners to build knowledge by critically examining their work. Cochran-Smith and Lytle (1999) noted that 'it is assumed that teachers learn when they have opportunities to examine and reflect on the knowledge that is implicit in good practice' (p. 262). However, for reflective practice to be widely adopted, it must be accepted as having value. As Abbott and Flynn (2022) in this review noted, the ECEC sector does not provide funding or pay practitioners for non-contact time. This presents a problem for staff who would like to engage in this form of practice but do not feel supported. Pierce and Beames (2022) noted the lack of visibility of reflective practices in public outdoor education and training centres; they urged that the sector 'become more critically reflective of their important work' (p. 11). Thus, for a shift to greater reflective practice in the field, there must first be a shift in the values and policies of the institutions.

The third finding in the area of the *professional educator* was that *If* more professional development programmes were situated in the learning context of ECEC practitioners, teachers and outdoor pedagogues, *then* the professionals would be more confident and better prepared to deliver outdoor learning in those educational settings. A number of studies have identified that teachers and pedagogues can struggle to access suitable professional development that will build their confidence and self-efficacy in the area of teaching outdoors (Christie et al., 2014; Kerr, 2020; Waite et al., 2016). Bortolotti et al. (2014) reported that a number of benefits accrued to children, including improved social skills, when they were facilitated outdoors by kindergarten pedagogues who had completed relevant professional development. As the position of OL is weak in Irish schools and educational institutions, it is particularly relevant that Christie et al. (2014) found that officially

organised professional development led to a 'legitimisation of learning outdoors' in the eyes of teachers (p. 56). Situating professional development programmes in ECEC settings, school grounds and local parks where the teachers and pedagogues work would be a practical solution. It would allow the practitioners to fully contextualise their experiences and make it easier to transfer their learning to their practice. Coulter and Woods (2012) noted the importance of professional development for teachers while based in the schools and which had pupils present. Such professional development could then be focused on the kind of pedagogies best suited to their local OL context. Pierce and Beames (2022) found that low-level, inappropriate pedagogical experience of practitioners in the public provision OET Centres had allowed for 'irrational practices to take hold and become normalised' (p. 8). In a study based in Northern Ireland, Kerr (2020) identified a creative, pragmatic and social-constructivist approach to professional development programming for teaching science outdoors where the practitioners became *co-teachers*. They 'learned together in the workshops before they coplanned and cotaught' (p. 32) programmes in schools with pupils. This approach built confidence, situated the learning and created the potential for a future co-support network of the teachers.

5.3. The flourishing of learners in the outdoors

This review found that active, affective and engaged learning has been reported in Irish OL. The papers have provided evidence of outdoor pedagogies which have delivered active, affective and engaged learning for participants in the reported programmes. These positive educational processes were reported across all the studies in this review. This is encouraging and correlates with the findings of international research regarding the positive effect of OL on school-going children and preschoolers (Becker et al., 2017; Frances et al., 2024; Mann et al., 2022). OL/OE is a pedagogical domain without fixed definitions and the full attributes of an established academic discipline (Potter & Dyment, 2016), establishing facts about the practice of OL in Ireland is important as only with such data can the sector legitimately press for a greater role in the school lives of children from birth to 18 years. In this area-of-action focused on *the flourishing of learners in the outdoors*, our remaining findings are more propositional. Outdoor learning is more impactful in the affective domain of learners: *If* we seek to optimise the impact of outdoor learning practice, *then* we should focus on the potential for affective growth and development afforded by outdoor learning and not just the physicality of the experiences. Finnerty and Murphy (2023) noted that, while physical education (PE) is more traditionally associated with the physical domain; outdoor adventure activities within PE are aimed at the affective domain. Studies in this review identified the prominence of attitudinal change among learners (Bird et al., 2022; Hunt, 2021) and the development of social skills (Leo et al., 2018; Tindall et al., 2017) in OL programmes. There appear to be some juxtaposed opinions of OL. It is perceived by some teachers and practitioners as activities that are physically demanding; challenging to manage; or challenging to teach (Dyment, 2005; van Dijk-Wesselius et al., 2020), while this review has identified more affective development with less emphasis on the physical demands.

The second finding in this area of action is that theory-informed practice can become more prevalent if more teachers and pedagogues are engaged as researchers or co-researchers with others. *If* more research on outdoor learning practice was happening across the sector with more practitioners being active agents and co-researchers in the investigations, *then* the theory being generated might be more easily adopted into practice by the teachers and pedagogues. Of the thirteen articles in this review, four were led by practitioner-researchers who were supported by co-authors/academic supervisors from the HE sector. The other nine reported on research led by HE academics who were researching practices in schools and educational institutions.

5.4. Challenges to and development of the field

The final area of action from this review includes findings related to the formation of future policies; the research agenda; and gaps in the application of outdoor teaching practice and its associated research. The first line of action in this area is that there is a need for greater clarity about the nature of OL and its use as a teaching method. *If* we want to improve practice in outdoor learning among pedagogues and teachers, *then* we could focus on the development of theory and practice concurrently by fostering greater pedagogical content knowledge (PCK). Many of the authors from this review have identified low levels of confidence among pedagogues and teachers in educational institutions when it comes to taking their teaching outdoors (Abbott & Flynn, 2022; Kelly, 2022; Usher, 2022). The privileged knowledge of how to teach outdoors has been identified as a significant gap in the professional competence of teachers and pedagogues both in Ireland and abroad (Dyment et al., 2018; Usher, 2022).

The last finding in this review was that the use of OL strategies for children with special educational needs and disabilities (SEND) merits more exploration. Children with SEND have the potential to benefit substantially from the application of outdoor learning practices. The area is not reported extensively and the integration of outdoor learning and UDL approaches could have an even greater impact. Only two of the papers in this review (Kelly et al., 2022; Tindall et al., 2017) focused on the application of OL practices with children with SEND. With Special Education teachers comprising 17.5% of all teachers in the country and with more than 18,000 Special Needs Assistants (SNAs) employed to support them (DES, 2023), there is evidence of government efforts to meet its obligations under the UN (2006) CRPD[1] charter and the Salamanca Statement and Framework for Action on Special Needs Education (UNESCO, 1994). However, teaching a person with a disability in OL settings continues to be considered a specialism within the work of OL practitioners and teachers (Aylward, 2020). OL can provide rich multi-sensory learning experiences that should not be primarily for those without disabilities and special needs.

5.5. Reporting quality assessment

As can be seen in Table 5, papers and chapters included in this review were found to show high, medium and low levels of quality when compared to the criteria set by Maeda et al. (2022) and defined in the CCEERC Quantitative Research Assessment Tool (Child Care and Early Education Research Connections, 2023). While six papers were deemed high or medium, seven research reports were deemed to show low levels of reporting quality. These assessment tools appraised the reporting of the research against specific criteria and should not be confused with a judgement on the quality of the research methodology or research activity undertaken. A unified approach to the reporting of empirical research on OL has been proposed by the editors of the major OE/OL-related journals in recent years (Seaman et al., 2020) and a specific appraisal of reporting quality in quantitative studies of nature-based adventure interventions was undertaken by Rosa et al. (2024). The majority of the research reported in this review used qualitative methods. While qualitative research can be diverse in its methods and underpinning conceptual frameworks, common practices for reporting could improve the impact of this research from Ireland.

6. Conclusions and recommendations

This research is the first systematic review of OL in Ireland to be published. The application of this research methodology has identified several specific lines of action for the enhancement and development of practice and policy. We hope this will inform OL practitioners and researchers and ultimately benefit outdoor learners. Drawing from the review's findings, four specific conclusions and concomitant recommendations were identified.

The first conclusion is that more research surrounding OL in Ireland is required. If this could involve closer collaboration between practitioners and researchers, there are substantial opportunities to have more practitioners involved in published research on OL. While the voice of practitioners as participants and, to a lesser extent, as co-researchers is present in the review, the voice of students, pupils and participants, is less prominent. We believe a 'Participative Action Learning and Research: PALAR' (Kearney et al., 2013) approach might enhance the quality of research outputs for the sector and ultimately benefit learners.

It would appear that small-scale and predominantly qualitative OL research studies are the ones most commonly published from Ireland. While qualitative research methods can deliver rich data and insights into specific settings, there was an absence of broader, quantitative studies about OL in the country. Only one large-scale quantitative study was identified in this review. In the context of the broader educational sphere, results from large-scale comparable research initiatives such as PISA and the HBSC study can influence education policy makers. Greater nationwide reporting of OL practices could strengthen the position of the sector by creating an evidence base which could better contextualise and describe the nature of the sector and inform policy developers and funders. While initiating large-scale research can be a costly endeavour, we would recommend replicating an existing study such as that undertaken in Scotland by Mannion et al. (2022). This study explored outdoor-based teaching, learning and play provisions in early years and in primary school. If this approach was replicated, with the inclusion of post-primary and FET settings, it could increase our knowledge of the sector and create a data set to compare with other countries of similar size where OL is used in formal education settings.

This review identified research happening across the sector from early years education to higher education. However, there is little indication of research about OL taking place in the post-primary and further education (FE) sectors. With the structural changes seen in recent years in junior cycle, and senior cycle within post-primary education and the exponential growth of the FET sector, the lack of publications on OL in these sectors would seem to indicate a gap in the research. We believe that these sub-sectors are under-researched. Future research studies in these areas might indicate the impact that these substantial changes in post-primary and FET sectors have had on OL. Utilising the guidelines for reporting empirical research in OL recommended by Seaman et al. (2020) could further increase the impact of that research.

Finally, it is worth noting that the application of systematic review methodology in OL or OE research is not common. However, it has become more popular with some significant publications in recent years (Becker et al., 2017; Mann et al., 2022; Mygind et al., 2019; van Kraalingen, 2023). OL and OE form a very diverse discipline (Potter & Dyment, 2016). The nuances of its variety are often captured in quite contextualised and generally qualitative research outputs. The use of aggregative approaches to synthesise findings (Hannes & Lockwood, 2011; Munn et al., 2021) might provide an opportunity for researchers to identify commonalities, connect and contrast the wealth of international research on the outdoors while maintaining fidelity to the original context and culture in which those research studies are set.

Note

1. Convention on the Rights of Persons with Disabilities, adopted 13 Dec. 2006, G.A. Res. 61/106, U.N. GAOR, 61st Sess., U.N. Doc. A/RES/61/106 (2006) (entered into force 3 May 2008) [hereinafter CRPD]. The CRPD text, along with its drafting history, resolutions, and updated list of signatories and states parties is posted on the United Nations Enable website, available at http://www.un.org/esa/socdev/enable/rights/convtexte.htm.

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Notes on contributors

Tomás Aylward is a lecturer at the School of Health & Social Sciences at MTU on the Southwest coast of Ireland. He is programme leader for a BA degree in outdoor learning. His research interests include persons experiencing disability in outdoor learning/OE, Critical Pedagogy and early years education in the outdoors.

Maura Coulter is a teacher educator/lecturer and Associate Dean for Research in the School of Arts Education and Movement at Dublin City University, Ireland. Her research interests include physical education teacher education, outdoor learning/activities, professional leadership, student voice and social justice pedagogies.

Tom Farrelly is a lecturer at MTU's School of Health & Social Science, teaching Sociology, Social Policy, and Research Methods across undergraduate and postgraduate programmes. He is also an academic developer, co-chair of the university research ethics committee, and a strong advocate for digital inclusion, open access, and educational equity.

ORCID

Tomás Aylward http://orcid.org/0000-0003-3049-2205
Maura Coulter http://orcid.org/0000-0001-9406-2349
Tom Farrelly http://orcid.org/0000-0002-1986-4154

References

Abbott, K., & Flynn, S. (2022). Outdoor education, interaction and reflection: A study of Irish outdoor ECEC. *Irish Educational Studies*, *43*(3), 371–391. https://doi.org/10.1080/03323315.2022.2088591

Aylward, T. (2020). Persons with a disability in outdoor learning. In M. A. Peters (Ed.), *Encyclopedia of teacher education* (pp. 1–6). Springer. https://doi.org/10.1007/978-981-13-1179-6_363-1

Aylward, T. (2022). *"Mind the S-Step"-A self-study of higher education* [Master's Thesis]. Munster Technological University. https://sword.cit.ie/cgi/viewcontent.cgi?article=1001&context=stemmas

Barnett-Page, E., & Thomas, J. (2009). Methods for the synthesis of qualitative research: A critical review. *BMC Medical Research Methodology*, *9*(1), 59. https://doi.org/10.1186/1471-2288-9-59

Beames, S., Higgins, P., Nicol, R., & Smith, H. (2023). *Outdoor learning across the curriculum: Theory and guidelines for practice* (2nd ed.). Routledge. https://doi.org/10.4324/9781003010890

Beames, S., Mackie, C., & Atencio, M. (2019). *Adventure and society*. Springer International Publishing. https://doi.org/10.1007/978-3-319-96062-3

Becker, C., Lauterbach, G., Spengler, S., Dettweiler, U., & Mess, F. (2017). Effects of regular classes in outdoor education settings: A systematic review on students' learning, social and health dimensions. *International Journal of Environmental Research and Public Health*, *14*(5), 485. https://doi.org/10.3390/ijerph14050485

Bird, Á., Fahy, F., & Reilly, K. (2022). Making evaluation work for the practitioner evaluator: Experience from the field of environmental education. *Environmental Education Research*, *28*(5), 715–734. https://doi.org/10.1080/13504622.2022.2036324

Blenkinsop, S., Telford, J., & Morse, M. (2016). A surprising discovery: Five pedagogical skills outdoor and experiential educators might offer more mainstream educators in this time of change. *Journal of Adventure Education & Outdoor Learning*, *16*(4), 346–358. https://doi.org/10.1080/14729679.2016.1163272

Bortolotti, A., Crudeli, F., & Ritscher, P. (2014). Outdoor learning In-service training for teachers a case study from Prato. *Journal Plus Education* 10 2 , 61–68 https://www.uav.ro/jour/index.php/jpe/article/view/261 .

Braun, V., & Clarke, V. (2019). Reflecting on reflexive thematic analysis. *Qualitative Research in Sport, Exercise & Health*, *11*(4), 589–597. https://doi.org/10.1080/2159676X.2019.1628806

Braun, V., & Clarke, V. (2021). Can I use TA? Should I use TA? Should I not use TA? Comparing reflexive thematic analysis and other pattern-based qualitative analytic approaches. *Counselling and Psychotherapy Research*, *21*(1), 37–47. https://doi.org/10.1002/capr.12360

Braun, V., & Clarke, V. (2023). Toward good practice in thematic analysis: Avoiding common problems and be(com)ing a *knowing* researcher. *International Journal of Transgender Health*, *24*(1), 1–6. https://doi.org/10.1080/26895269.2022.2129597

Butler, A., Hall, H., & Copnell, B. (2016). A guide to writing a qualitative systematic review protocol to enhance evidence-based practice in nursing and health care. *Worldviews on Evidence-Based Nursing*, *13*(3), 241–249. https://doi.org/10.1111/wvn.12134

Child Care and Early Education Research Connections Child Care and Early Education Research Connections, (2023). Quantitative Research Assessment Tool https://researchconnections.org/sites/default/files/2021-04/quantitativeresearch.pdf

Christie, B., Higgins, P., King, B., Collacott, M., Kirk, K., & Smith, H. (2019). From rhetoric to reality: Examining the policy vision and the professional process of enacting learning for sustainability in Scottish schools. *Scottish Educational Review*, *51*(1), 44–56. https://doi.org/10.1163/27730840-05101006

Christie, B., Nicol, R., Beames, S., Ross, H., & Higgins, P. (2014). Outdoor education provision in Scottish schools. *Scottish Educational Review*, *46*(1), 48–64. https://doi.org/10.1163/27730840-04601005

Cochran-Smith, M., & Lytle, S. L. (1999). Chapter 8: Relationships of knowledge and practice: Teacher learning in communities. *Review of Research in Education*, *24*(1), 249–305. https://doi.org/10.3102/0091732X024001249

Cooke, A., Smith, D., & Booth, A. (2012). Beyond PICO: The SPIDER tool for qualitative evidence synthesis. *The Qualitative Health Research*, *22*(10), 1435–1443. https://doi.org/10.1177/1049732312452938

Coulter, M., & Woods, C. B. (2012). Primary teachers' experience of a physical education professional development programme. *Irish Educational Studies*, *31*(3), 329–343. https://doi.org/10.1080/03323315.2012.710062

Council of Europe. (2025). *Definitions: Forms of education*. https://www.coe.int/en/web/european-youth-foundation/definitions

Cummins, M. (2010). *Eleven years on: A case study of geography practices and perspectives within an Irish primary school* [Unpublished MEd thesis]. Dublin City University.

Deleuze, G., & Guattari, F. (1987). *A thousand plateaus: Capitalism and schizophrenia*. University of Minnesota Press.

DES. (2023). *Statements of strategy 2023-2025*. https://www.gov.ie/en/collection/b6dc04-statements-of-strategy-from-the-department-of-education-and-skills/

Dillon, M., Tannehill, D., & O'Sullivan, M. (2016). "I know when I did it, I got frustrated": The influence of 'living' a curriculum for preservice teachers. *Journal of Teaching in Physical Education*, *36*(4), 445–454. https://doi.org/10.1123/jtpe.2016-0157

Dimec, D. S., & Kokalj, I. (2018). The development and role of outdoor education and CŠOD in the Slovenian school system Becker, Peter, Humberstone, Barbara, Loynes, Chris, Schirp, Jochem eds. In *The changing world of outdoor learning in Europe*. Routledge doi:https://doi.org/10.4324/9781315170671.

Dixon-Woods, M., Agarwal, S., Jones, D., Young, B., & Sutton, A. (2005). Synthesising qualitative and quantitative evidence: A review of possible methods. *Journal of Health Services Research & Policy*, *10*(1), 45–53. https://doi.org/10.1177/135581960501000110

Dolan, A. M., Waldron, F., Pike, S., & Greenwood, R. (2014). Student teachers' reflections on prior experiences of learning geography. *International Research in Geographical & Environmental Education*, *23*(4), 314–330.

Dunn, E. L., Lawrence, G. P., Gottwald, V. M., Hardy, J., Holliss, B., Oliver, S. J., Roberts, R., & Woodman, T. (2024). Thirty years of longitudinal talent development research: A systematic review and meta-aggregation. *International Review of Sport & Exercise Psychology*, 1–28. https://doi.org/10.1080/1750984X.2024.2309623

Dyment, J. E. (2005). Green school grounds as sites for outdoor learning: Barriers and opportunities. *International Research in Geographical & Environmental Education*, *14*(1), 28–45. https://doi.org/10.1080/09500790508668328

Dyment, J. E., Chick, H. L., Walker, C. T., & Macqueen, T. P. N. (2018). Pedagogical content knowledge and the teaching of outdoor education. *Journal of Adventure Education & Outdoor Learning*, *18*(4), 303–322. https://doi.org/10.1080/14729679.2018.1451756

Eakin, J. M., & Mykhalovskiy, E. (2003). Reframing the evaluation of qualitative health research: Reflections on a review of appraisal guidelines in the health sciences. *Journal of Evaluation in Clinical Practice*, *9*(2), 187–194. https://doi.org/10.1046/j.1365-2753.2003.00392.x

ETBI. (2022). *ETB outdoor education and training provision a strategic framework for the sector 2021-2023*. https://www.etbi.ie/wp-content/uploads/2022/02/FET-Outdoor-Education-Training-12.11.pdf?x42895

Faskunger, J., Szczepanski, A., & Åkerblom, P. (2018). *Teaching with the sky as a ceiling: A review of research about the significance of outdoor teaching for children's learning in compulsory school*. Linköping University Electronic Press. https://www.diva-portal.org/smash/record.jsf?pid=diva2:1253050

Festeu, D., & Humberstone, B. (2006). *Non-formal education through outdoor activities guide*. European Institute for Outdoor Adventure Education and Experiential Learning. https://www.eoe-network.eu/fileadmin/PDFs/NFE_FesteuHumberstone_.pdf

Finnerty, C., & Murphy, F. (2023). 'Being well': The master key to unlocking competencies? How outdoor and adventure activities contribute to the development of children within a competency-based curriculum. *Education*, *3*, 1–20. https://doi.org/10.1080/03004279.2023.2239252

Flemming, K., & Jones, L. V. (2019). Using evidence from systematic reviews. In J. Craig & D. Dowding (Eds.), *Evidence based practice in nursing* (4th ed. pp. 109–125). Elsevier.

Flemming, K., & Noyes, J. (2021). Qualitative evidence synthesis: Where are we at? *International Journal of Qualitative Methods*, *20*, 160940692199327. https://doi.org/10.1177/1609406921993276

Frances, L., Quinn, F., Elliott, S., & Bird, J. (2024). Outdoor learning across the early years in Australia: Inconsistencies, challenges, and recommendations. *The Australian Educational Researcher*, *51*(5), 2141–2159. https://doi.org/10.1007/s13384-023-00685-x

Gleeson, J. (2022). Evolution of Irish curriculum culture: Understandings, policy, reform and change. *Irish Educational Studies*, *41*(4), 713–733. https://doi.org/10.1080/03323315.2021.1899028

Grant, M. J., & Booth, A. (2009). A typology of reviews: An analysis of 14 review types and associated methodologies: A typology of reviews. *Health Information & Libraries Journal*, *26*(2), 91–108. https://doi.org/10.1111/j.1471-1842.2009.00848.x

Hannes, K., & Lockwood, C. (2011). Pragmatism as the philosophical foundation for the Joanna Briggs meta-aggregative approach to qualitative evidence synthesis. *Journal of Advanced Nursing*, *67*(7), 1632–1642. https://doi.org/10.1111/j.1365-2648.2011.05636.x

Hannon, S. (2015). *Outdoor education in Ireland* [Unpublished M. Sc. Thesis]. University of Cumbria. https://cumbria.primo.exlibrisgroup.com/discovery/fulldisplay?docid=alma99230514502701&context=L&vid=44UOC_INST:44UOC_VU1&lang=en&search_scope=MyInst_and_CI&adaptor=Local%20Search%20Engine&isFrbr=true&tab=Everything&query=any%2Ccontains%2C%22stephen%20hannon%22&sortby=date_d&facet=frbrgroupid%2Cinclude%2C9041946833854136550&offset=0

Hannon, S. (2018). Irish outdoor education: Knowing my place. In P. Becker, B. Humberstone, C. Loynes, & J. Schirp (Eds.), *The changing world of outdoor learning in Europe* (pp. 194–206). Routledge.

Hannon, S., & O'Callaghan, K. (2021). *ETBI outdoor education and training centre network sectoral review*. https://library.etbi.ie/ld.php?content_id=33536045

Henrich, J., Heine, S. J., & Norenzayan, A. (2010). The weirdest people in the world? *Behavioral and Brain Sciences*, *33*(2–3), 61–83. https://doi.org/10.1017/S0140525X0999152X

Hill, D. A., Cosgriff, M., Irwin, D. D., & Watson, S. (2020). *Education outside the classroom in Aotearoa New Zealand - a comprehensive national study: Final report*. Ara Institute of Canterbury Ltd. https://eonz.org.nz/assets/PDFWord_Docs/EOTCResearch/EOTC-in-Aotearoa-New-Zealand-Final-Report-2020-compressed.pdf

Ho, S. (2011). *Functions and purposes of outdoor education in singaporean education and society: An instrumental case study* [PhD Thesis]. La Trobe. https://opal.latrobe.edu.au/ndownloader/files/38766921

Hunt, L. (2021). Ocean literacy and youth - integrating a place based SDG 14 intervention into Irish secondary school curriculum. *International Journal of Technology and Inclusive Education*, *10*(1), 1659–1666. https://doi.org/10.20533/ijtie.2047.0533.2021.0204

Jeffs, T. (2017). Informal education and the outdoors. In T. Jeffs & J. Ord (Eds.), *Rethinking outdoor, experiential and informal education*. Routledge 56–75.

Kearney, J., Wood, L., & Zuber-Skerritt, O. (2013). Community–university partnerships: Using participatory action learning and action research (PALAR). *Gateways: International Journal of Community Research and Engagement*, *6*, 113–130. https://doi.org/10.5130/ijcre.v6i1.3105

Kelly, O. (2022). Outdoor learning and student teacher identity.Cutting, Roger, Passey, Rowena eds. In *Contemporary approaches to outdoor learning: Animals, the environment and new methods* (pp. 187–199). Springer.

Kelly, O., Buckley, K., Lieberman, L. J., & Arndt, K. (2022). Universal design for learning-A framework for inclusion in outdoor learning. *Journal of Outdoor and Environmental Education*, *25*(1), 75–89. https://doi.org/10.1007/s42322-022-00096-z

Kerr, K. (2020). Teacher development through coteaching outdoor science and environmental education across the elementary-middle school transition. *The Journal of Environmental Education*, *51*(1), 29–43. https://doi.org/10.1080/00958964.2019.1604482

Knapp, C. (2013). Foreword. In J. Quay & J. Seaman (Eds.), *John Dewey and education outdoors: Making sense of the "educational situation" through more than a century of progressive reforms*. Brill xiii.

Largo-Wight, E., Guardino, C., Wludyka, P. S., Hall, K. W., Wight, J. T., & Merten, J. W. (2018). Nature contact at school: The impact of an outdoor classroom on children's well-being. *International Journal of Environmental Health Research*, *28*(6), 653–666. https://doi.org/10.1080/09603123.2018.1502415

Leo, J., Mourton, N.-E., Mustafa, H., & O'connor, A. (2018). Leave no one behind: Using flow learning to increase outdoor recreation opportunities for people of all abilities. *Palaestra*, *32*(2), 43–48.

Lisiecka, D., Kearns, A., Bourke, F., Lawson, I., & Muir, C. (2022). A qualitative meta-synthesis of evidence (meta-ethnography) exploring the personal experiences of gastrostomy tube in neurodegenerative diseases: A case of motor neurone disease. *Disability and Rehabilitation*, *44*(18), 4949–4965. https://doi.org/10.1080/09638288.2021.1922518

Lockwood, C., Munn, Z., & Porritt, K. (2015). Qualitative research synthesis: Methodological guidance for systematic reviewers utilizing meta-aggregation. *International Journal of Evidence-Based Healthcare*, *13*(3), 179–187. https://doi.org/10.1097/XEB.0000000000000062

Loynes, C. (2007). *Social reform, militarism and other historical influences on the practice of outdoor education in youth work* (P. Becker, K.-H. Braun, & J. Schirp, Eds). Budrich-Verlag. https://shop.budrich-academic.de/produkt/abenteuer-erlebnisse-und-die-paedagogik/?v=79cba1185463

Lysaght, S. (1998). *Robert Lloyd Praeger: The life of a naturalist*. Four Courts Press Ltd.

Maeda, Y., Caskurlu, S., Kozan, K., & Kenney, R. H. (2022). Development of a critical appraisal tool for assessing the reporting quality of qualitative studies: A worked example. *Quality and Quantity*, *57*(2), 1011–1031. https://doi.org/10.1007/s11135-022-01403-y

Majid, U., & Vanstone, M. (2018). Appraising qualitative research for evidence syntheses: A compendium of quality appraisal tools. *The Qualitative Health Research*, *28*(13), 2115–2131. https://doi.org/10.1177/1049732318785358

Mann, J., Gray, T., Truong, S., Brymer, E., Passy, R., Ho, S., Sahlberg, P., Ward, K., Bentsen, P., Curry, C., & Cowper, R. (2022). Getting out of the classroom and into nature: A systematic review of nature-specific outdoor learning on school children's learning and development. *Frontiers in Public Health*, *10*, 10. https://doi.org/10.3389/fpubh.2022.877058

Mann, J., Gray, T., Truong, S., Sahlberg, P., Bentsen, P., Passy, R., Ho, S., Ward, K., & Cowper, R. (2021). A systematic review protocol to identify the key benefits and efficacy of nature-based learning in outdoor educational settings. *International Journal of Environmental Research and Public Health*, *18*(3), 1199–1209. https://doi.org/10.3390/ijerph18031199

Mannion, G., & Lynch, J. (2015). The primacy of place in education in outdoor settings. In B. Humberstone, H. Prince, & K. A. Henderson (Eds.), *Routledge international handbook of outdoor studies* (1st ed. pp. 85–94). Routledge. https://doi.org/10.4324/9781315768465-11

Mannion, G., Ramjan, C., McNicol, S., Sowerby, M., & Lambert, P. (2022). Teaching, learning and play in the outdoors: A survey of provision in Scotland in 2022 | NatureScot. *NatureScot research report 1313-*. https://www.nature.scot/doc/naturescot-research-report-1313-teaching-learning-and-play-outdoors-survey-provision-scotland-2022

McDonald, P. (1997). *Climbing lessons: Inside outdoor education*. PJ McDonald.

Munn, Z., Dias, M., Tufanaru, C., Porritt, K., Stern, C., Jordan, Z., Aromataris, E., & Pearson, A. (2021). The "quality" of JBI qualitative research synthesis: A methodological investigation into the adherence of meta-aggregative systematic reviews to reporting standards and methodological guidance. *JBI Evidence Synthesis*, *19*(5), 1119–1139. https://doi.org/10.11124/JBIES-20-00364

Mygind, L., Kjeldsted, E., Hartmeyer, R., Mygind, E., Bølling, M., & Bentsen, P. (2019). Mental, physical and social health benefits of immersive nature-experience for children and adolescents: A systematic review and quality assessment of the evidence. *Health & Place*, *58*, 102136. https://doi.org/10.1016/j.healthplace.2019.05.014

Neville, I. A., Petrass, L. A., & Ben, F. (2023). Cross disciplinary teaching: A pedagogical model to support teachers in the development and implementation of outdoor learning opportunities. *Journal of Outdoor and Environmental Education*, *26*(1), 1–21. https://doi.org/10.1007/s42322-022-00109-x

Newman, M., & Gough, D. (2020). Systematic reviews in educational research: Methodology, perspectives and application. In O. Zawacki-Richter, M. Kerres, S. Bedenlier, M. Bond, & K. Buntins (Eds.), *Systematic reviews in educational research: Methodology, perspectives and application* (pp. 3–22). Springer Fachmedien Wiesbaden. https://library.oapen.org/bitstream/handle/20.500.12657/23142/1007012.pdf?sequenc#page=22

Nicol, R. (2002). Outdoor education: Research topic or universal value? Part one. *Journal of Adventure Education & Outdoor Learning*, *2*(1), 29–41. https://doi.org/10.1080/14729670285200141

Nielsen, G., Mygind, E., Bølling, M., Otte, C. R., Schneller, M. B., Schipperijn, J., Ejbye-Ernst, N., & Bentsen, P. (2016). A quasi-experimental cross-disciplinary evaluation of the impacts of education outside the classroom on pupils' physical activity, well-being and learning: The TEACHOUT study protocol. *BMC Public Health*, *16*(1), 1117. https://doi.org/10.1186/s12889-016-3780-8

North, C., & Dyment, J. (2021). Outdoor education and pedagogical content knowledge: More than class five rapids. In G. Thomas, J. E. Dyment, & H. Prince (Eds.), *Outdoor environmental education in higher education* (pp. 173–186). Springer.

O'Carroll, C., & Scanlon, D. (2023). An outdoor educator's self-study of enacting a pedagogical model for outdoor adventure education to facilitate affective learning experiences. Advance online publication. *Physical Education & Sport Pedagogy*, 1–16. https://doi.org/10.1080/17408989.2023.2281918

Ojeda, M., & Del Rey, R. (2022). Lines of action for sexting prevention and intervention: A systematic review. *Archives of Sexual Behavior*, *51*(3), 1659–1687. https://doi.org/10.1007/s10508-021-02089-3

O'Malley, S., & Pierce, J. (2023). Mainstream or margins? The changing role of environmental education in Irish primary school curricula & comma; 1872 to 2021. *Journal of Outdoor and Environmental Education*, *26*(2), 189–206. https://doi.org/10.1007/s42322-022-00118-w

Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S. & Moher, D. (2021). The PRISMA, 2020 statement: An updated guideline for reporting systematic reviews. *International Journal of Surgery*, *88*, 105906. https://doi.org/10.1016/j.ijsu.2021.105906

Pierce, J. (2020). *The nature of public provision outdoor education in the Republic of Ireland: An ethno-case study of four outdoor education and training centres* [Unpublished Ph.D. Thesis]. University of Edinburgh. https://era.ed.ac.uk/handle/1842/37930

Pierce, J., & Beames, S. (2022). Where's the E in OE? The McDonaldization of Irish outdoor education. *Journal of Adventure Education & Outdoor Learning*, 1–14. https://doi.org/10.1080/14729679.2023.2254861

Pierce, J., & Beames, S. (2024). Where's the E in OE? A critical analysis of Irish outdoor education. *Journal of Outdoor and Environmental Education*. https://doi.org/10.1007/s42322-024-00161-9

Pierce, J., & Telford, J. (2023). From McDonaldization to place-based experience: Revitalizing outdoor education in Ireland. *Journal of Adventure Education & Outdoor Learning*, 1–14. https://doi.org/10.1080/14729679.2023.2254861

Pike, S. (2011). "If you went out it would stick": Irish children's learning in their local environments. *International Research in Geographical & Environmental Education*, *20*(2), 139–159. https://doi.org/10.1080/10382046.2011.564787

Potter, T. G., & Dyment, J. E. (2016). Is outdoor education a discipline? Insights, gaps and future directions. *Journal of Adventure Education & Outdoor Learning*, *16*(2), 146–159. https://doi.org/10.1080/14729679.2015.1121767

Quay, J., & Seaman, J. (2013). *John Dewey and education outdoors: Making sense of the "educational situation" through more than a century of progressive reforms*. Brill. http://ebookcentral.proquest.com/lib/tralee-ebooks/detail.action?docID=3034829

Quibell, T., Charlton, J., & Law, J. (2017). Wilderness schooling: A controlled trial of the impact of an outdoor education programme on attainment outcomes in primary school pupils. *British Educational Research Journal*, *43*(3), 572–587. https://doi.org/10.1002/berj.3273

Relph, E. (1976). *Place and placelessness*. SAGE Publications Ltd.

Rosa, C. D., Chaves, T. S., Collado, S., & Harper, N. J. (2024). Improving the analysis and reporting of studies of nature-based adventure interventions: A review of studies published in JAEOL. *Journal of Adventure Education & Outdoor Learning*, *24*(4), 642–661. https://doi.org/10.1080/14729679.2023.2196638

SAPOE. (2023). *Curriculum beyond the classroom our strategy for 2024 - 2029*. https://sapoe.org.uk/wp-content/uploads/2023/11/sapoe-strategy-document-2024-2029.pdf

Schön, D. A. (1983). *The reflective practitioner: How professionals think in action*. Ashgate.

Seaman, J., Dettweiler, U., Humberstone, B., Martin, B., Prince, H., & Quay, J. (2020). Joint recommendations on reporting empirical research in outdoor, experiential, environmental, and adventure education journals. *The Journal of Experiential Education*, *43*(4), 348–364. https://doi.org/10.1177/1053825920969443

Seligman, M. E. P. (2011). *Flourish: A new understanding of happiness, well-being - and how to achieve them*. Nicholas Brealey Publishing. http://ebookcentral.proquest.com/lib/dcu/detail.action?docID=753390

Shulman, L. S. (1986). Those who understand: Knowledge growth in teaching. *Educational Researcher*, *15*(2), 4–14. https://doi.org/10.3102/0013189X015002004

Smith, R. A. L., & Walsh, K. M. (2019). Some things in life can't be 'googled: ' a narrative synthesis of three key questions in outdoor education. *Journal of Youth Studies*, *22*(3), 312–329. https://doi.org/10.1080/13676261.2018.1506096

Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. *Journal of Business Research*, *104*, 333–339. https://doi.org/10.1016/j.jbusres.2019.07.039

Sutherland, S., Stuhr, P. T., & Ayvazo, S. (2016). Learning to teach: Pedagogical content knowledge in adventure-based learning. *Physical Education & Sport Pedagogy*, *21*(3), 233–248. https://doi.org/10.1080/17408989.2014.931365

Thomas, G. (2015). Signature pedagogies in outdoor education. *Asia-Pacific Journal of Health, Sport and Physical Education*, *6*(2), 113–126. https://doi.org/10.1080/18377122.2015.1051264

Thomas, J., & Harden, A. (2008). Methods for the thematic synthesis of qualitative research in systematic reviews. *BMC Medical Research Methodology*, *8*(1), 45. https://doi.org/10.1186/1471-2288-8-45

Tindall, D., Neylon, J., Parker, M., & Tannehill, D. (2017). Promoting social inclusion and physical activity for students with special educational needs through adventure education. In A. J. S. Morin, C. Maïano, & D. Tracey (Eds.), *Inclusive physical activities: International perspectives* (p. 183). IAP. https://ebookcentral.proquest.com/lib/munster/reader.action?docID=4860602&ppg=6

Trant, A. (2007). *Curriculum matters in Ireland*. Blackhall Publishing.

UNESCO. (1994). *The Salamanca statement and framework for action on special needs education*. https://unesdoc.unesco.org/ark:/48223/pf0000098427

Usher, J. (2022). How is geography taught in Irish primary schools? A large scale nationwide study. *International Research in Geographical & Environmental Education*, *31*(4), 337–354. https://doi.org/10.1080/10382046.2021.1978210

van Dijk-Wesselius, J. E., Van den Berg, A. E., Maas, J., & Hovinga, D. (2020). Green schoolyards as outdoor learning environments: Barriers and solutions as experienced by primary school teachers. *Frontiers in Psychology*, *10*, 484511. https://doi.org/10.3389/fpsyg.2019.02919

van Kraalingen, I. (2023). A systematized review of the use of mobile technology in outdoor learning. *Journal of Adventure Education & Outdoor Learning*, *23*(3), 203–221. https://doi.org/10.1080/14729679.2021.1984963

Waite, S., Passy, R., Gilchrist, M., Hunt, A., & Blackwell, I. (2016). Natural connections demonstration project, 2012-2016-final report. *Number 215*. DEFRA/Natural England. https://pearl.plymouth.ac.uk/handle/10026.1/10080

Westphal, R. (2011). *We have the Fjells, but you have character. . .": A comparative study of personal and social development (PSD) within the discourses of outdoor education in Great Britain and Friluftsliv in Norway* [PhD Thesis]. University of Edinburgh.

Whelan, J., & Kelly, O. (2023). Experiential, relational, playful pedagogy in Irish primary schools – possibilities offered by forest school. *Irish Educational Studies*, *43*(4), 1363–1387. https://doi.org/10.1080/03323315.2023.2280224