

Teaching and learning in the outdoors: the current state of outdoor learning in schools in Wales

Research

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Audience

This project was undertaken as part of the Collaborative Evidence Network. The findings are aimed at policymakers and LAs, who can support schools and practitioners in developing outdoor learning policy, guidance, resources and professional development for the education workforce in Wales.

Overview

This report presents the findings from a comprehensive literature review and a validated survey sent out to schools to gain an indicative picture of the current outdoor learning provision in Wales.

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Action required

The findings suggest that a coherent strategy and budget allocation are required to support schools and local authorities in curating outdoor learning resources in an accessible format and single location/repository, providing professional development opportunities for the education workforce and increasing awareness of outdoor learning as a viable and effective pedagogy rather than an enrichment activity in both the existing workforce and in programmes of initial teacher education.

Further information

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Mae'r ddogfen yma hefyd ar gael yn Gymraeg.
This document is also available in Welsh.

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Glossary

Acronym	Definition
WG	Welsh Government
NSERE	National Strategy for Educational Research and Enquiry
ITE	Initial Teacher Education
IOL	Institute for Outdoor Learning
RSPB	Royal Society for the Protection of Birds
CPD	Continuing Professional Development
STEM	Science, Technology, Engineering and Mathematics
HEI	Higher Education Institution
LA	Local Authority
WIMD	Welsh Index for Multiple Deprivation
CEN	Collaborate Evidence Network

Executive Summary

This report presents the findings of a study investigating the knowledge of, access to and purposes for, outdoor learning in Wales. Outdoor learning played a significant role in the health and wellbeing of children and young people during the Covid-19 pandemic (Sefton, 2021) and a previous WG commissioned report found that during, between, and directly subsequent to Covid-19 lockdowns, 'outdoor learning played an increased role, both in and out of school, in supporting physical and mental wellbeing' (French, Horder, Jones, Parry, Mahoney, Moody and Rhys-Jones, 2021, p. 79). With the importance of outdoor learning as a pedagogical approach that has both physical and cognitive benefits having been established, the current study attempted to provide an indication of how outdoor learning was being utilised in schools across Wales. The research utilised a small convenience sample to provide indicative findings of the frequency, type of activity and purposes of activity undertaken by schools. The study deployed a survey-based data capture instrument and research design based on an effective methodology from three studies conducted in Scotland (commissioned by Scottish Government), commencing in the late 2000s through to 2018. The data collection instrument was modified to suit the Welsh context in terms of school types and provision, and in light of the transitional period between the previous iteration of, and the current Curriculum for Wales.

The study found that amongst the schools surveyed, sessions ranged in duration from 30 mins to full days (6 hours), with groups ranging from 4 children to 29. There were between 1 and 4 adults supervising the children during these sessions who were teachers and teaching assistants, associate teachers (a term frequently used by ITE partnerships to describe student teachers) or outdoor instructors. The main purposes of the sessions were to develop teamworking skills, and to draw direct links with the Curriculum for Wales. Fewer sessions were delivered for the specific purposes of extra-curricular health and well-being or to experience nature and a sense of place (*cynefin*), and there were very few sessions reported for the purpose of field work, being creative, adventure or to study or conserve local heritage or learn about Wales. The main stated curriculum links were to the health and well-being and language literacy and communication areas of learning and experience. There were very few sessions with clear links to recognised award schemes such as the John Muir Award. The reported impact of the sessions on the children and young people concerned was primarily concerned with developing personal choice and overcoming challenge.

Other findings concerned the challenges of collecting data by the research team resulting from the over-researching of practitioners during challenging times (still during the Covid-19 recovery period for instance) and the plethora of similar projects that also utilised existing HEI/school networks so the same schools are routinely asked to contribute.

The report concluded that the timing of data collection came at a time of year when the weather in Wales requires more protective clothing to remain comfortable and thus there were potentially fewer episodes of outdoor learning than might have been expected from the literature review, and that whilst outdoor learning was valued by the schools that engaged in the survey, the sample size was very small and therefore findings are indicative rather than generalised across Wales. The project timing and scale were constrained by the timescale of the commission, but did highlight that there is still a lack of clarity concerning a definition of outdoor learning. Between the completion of this study and the submission of

this report, definitions of outdoor learning, adventure education and outdoor education (specific to the Welsh educational context) have been suggested in the presentation to the Outdoor Activity Sector Senedd Cross Party Group on 28th September 2022.

1. Introduction

Outdoor learning played a significant role in the health and wellbeing of children and young people during the Covid-19 pandemic (Sefton, 2021). In the context of Wales, where the new Curriculum for Wales is to be implemented from the start of the 2022-23 academic year, this research serves as a pilot study to gauge the interest and use of outdoor learning in schools in Wales. Pillman (2022) suggests that “Outdoor learning has become increasingly important over the last few years, especially as a result of the Covid-19 pandemic which has made us all more aware than ever of how important it is to spend time outdoors and to nurture our connection with nature.” Welsh government advocates outdoor learning as a key pedagogical approach for delivering the new Curriculum for Wales. In addition, previous research into the impact of the pandemic on the health and well-being of children, young people, educational professionals, and Initial Teacher Education providers concluded that ‘outdoor learning played an increased role, both in and out of school, in supporting physical and mental wellbeing’ (French, Horder, Jones, Parry, Mahoney, Moody and Rhys-Jones, 2021, p. 79). This research project aimed to investigate how outdoor learning is currently being utilised in schools, and the benefits it has on teaching and learning.

In response to the collective Renew and Reform plan for education, and the gap in research and evidence about schools’ usage of outdoor learning as a pedagogy, this research report summarises findings from a quantitative study which was conducted in the months of February and March 2022. Despite the low response rate, this research project provides researchers and policymakers with an indication of how outdoor learning is currently being used in Wales, and makes some progress in determining effective tools for measuring the impact of this pedagogy. The results presented in this study are based on a small convenience sample but are indicative of how outdoor learning is being used in some classrooms in Wales. Along with the practical conclusions that can be drawn from the collected data, this study also allows for useful reflection on the use of surveys as the primary source of data collection in this research domain.

Although difficult to define, *outdoor learning* is widely accepted as having a positive impact on the teaching and learning of all children and young people. Scottish educational policy has considered work presented by Learning and Teaching Scotland (2010), which argues that ‘Well-constructed and well-planned outdoor learning helps develop the skills of enquiry, critical thinking and reflection necessary for our children and young people to meet the social, economic and environmental challenges of life in the 21st century. Outdoor learning connects children and young people with the natural world, with our built heritage and our culture and society’ (p. 7). This fits well with the Welsh concept of ‘*cynefin*’, which has been included in the new curriculum. *Cynefin* embodies the idea of connecting people with the place where they belong and where they are encouraged and supported to engage with the environment around them (Welsh Government, 2021). *Cynefin* is therefore linked not only to outdoor learning as a pedagogy but as a legitimisation of place-based identity. Outdoor learning became an increasingly important feature of education, as a result of the Covid-19 pandemic that reminded us all about how important it is to spend time outdoors and connect with nature (NRW, 2022).

Outdoor learning has been widely recognised for its significant health and wellbeing benefits and is advocated by the Welsh Government as a key pedagogical approach to support the

national mission in Wales to improve education through the Curriculum for Wales (Welsh Government, 2021). Schools are being encouraged to develop their own curriculum which promotes collaboration and cross-disciplinary planning, learning and teaching to enable learners to develop towards the four purposes of the curriculum. An understanding of the pedagogy of learning outside of the traditional classroom offers schools a range of approaches that help learners build connections across their different learning experiences, knowledge, and skills (Welsh Government, 2021). This research project serves as a pilot study for others that can build upon its intentions and design, and recognises the challenges and limitations faced by researchers in this area of work. Understanding outdoor learning takes time, and this project clearly indicates that further work must be done to understand teachers' perspectives and beliefs about the power of outdoor learning, and to determine how best to educate teachers and schools about its pedagogical power.

Following this Introduction, this research report introduces literature relevant to the topic of outdoor learning, including its proven benefits and difficulties in a variety of contexts. Next, the Methodology relates this research to a similar study in Scotland (Mannion, Mattu, & Wilson, 2015) and notes the amendments that have been made to adjust to the Welsh context. The Findings and Discussion chapters reflect on the collected data and situate them within the context and limitations of the small sample size. The final chapter summarises the various indicative conclusions that can be reached from the project.

2. Literature Review

2.1. Introduction

This chapter provides a review of literature that addresses the use of outdoor learning in schools and considers research from a range of settings in order to synthesise findings and recommendations that can inform this study. The chapter is divided according to the themes revealed in relevant literature: the benefits of outdoor learning on both the learner and teacher; the challenges linked to implementing outdoor learning; and the differences in opportunities between different-aged school groups.

However, to begin the chapter, we address the issue of defining *outdoor learning*. Providing a concise definition of outdoor learning has its challenges and impacts on the rigor of all studies in its domain. The unique qualities of outdoor learning prevent a specific definition and too much detail limits the focus. As a result, this can exclude the wide range of activities, approaches and locations that can describe outdoor learning. The Institute for Outdoor Learning report in 2021 suggests, however, that the term serves as ‘an umbrella term for actively inclusive facilitated approaches that predominantly use activities and experiences in the outdoors which lead to learning, increased health and wellbeing and environmental awareness’ (p. 1). Constructing a dividing line between what is considered outdoor learning and what is not undermines the inclusive nature of the term; but any definition that is so broad that it includes every aspect of learning becomes unworkable. Therefore, accounting for these difficulties, this research report considers the definition and the need to be inclusive as not mutually exclusive, therefore allowing for broad and narrow understandings of the concept. However, as is seen in the literature review, results, and conclusions drawn from the study, it is clear that teachers struggle to understand the full concept of outdoor learning and therefore can be reluctant to classify activities as part of ‘outdoor learning’ unless they fit into very defined categories.

2.2. Benefits of outdoor learning

Literature from around the globe portrays outdoor learning as an incredibly positive and beneficial tool for education. Not only do the following studies and themes reveal the academic advantages of using outdoor learning, but they also classify outdoor learning as serving holistic educational needs such as health and wellbeing of both learners and teachers. The studies reviewed in this section present the benefits that outdoor learning offers to all sectors of school-based education.

To contextualise this section, we rely on Forbes and Hollyhock’s (2014) frame that outdoor learning is an extended classroom. This extended classroom sees the school buildings as a hub with learning spaces that radiate outwards to the school grounds, local community surrounding the school, and the locality, town and community, and wider world that surround the school. Thus, with this extended, or ‘outdoor’ classroom, buildings are no longer the only, or always the best, spaces for learning. This concept resonates with a study by Plymouth University (Gilchrist and Emmerson, 2016) that relied on communities of schools to share ideas between themselves and used experts to help develop new opportunities for outdoor learning. Each school set up their own outdoor learning team and these helped both their own and other schools feel more confident in using outdoor learning as a pedagogy. This study therefore not only relied on the extended classroom environment to share ideas, but also used outdoor learning to develop teaching practice at schools. Recorded benefits from the study include pupils’ increased enjoyment of lessons,

engagement, and the feeling of having their health and wellbeing supported. Teachers described their benefits as increased job satisfaction, improvements in their teaching practice and professional development and therefore also resulting in a positive impact on their health and wellbeing. From this study, Gilchrist and Emmerson (2016) recommend whole-school approaches to outdoor learning as well as communities of learning of local schools. The use of school grounds and local spaces and cross-school collaboration are heralded as some of the most important outcomes from this research.

Other research projects have similarly concluded that children engage more fully in their education through outdoor learning. For example, a study by Marchant *et al.* (2019) showed that Key Stage 2 learners were more engaged with lessons and the natural world when outdoors. The teachers involved in this study believed that their learners were choosing to spend less time outdoors on their own and therefore outdoor learning did not only serve as an opportunity to encourage children to spend more time outdoors, but also improved their educational engagement and awareness and care for the environment. Researching similar work, Maynard *et al.*'s (2011) study found that this engagement with the outdoors was particularly beneficial for additional learning needs pupils, or those with learning difficulties, who would otherwise not spend such time outdoors. Williams and Scott (2019) explored similar themes in their secondary school research, which found that there are differences between indoor and outdoor learning, and that both can impact differently on the behavioural, engagement, and mood of learners in positive and negative ways. In order to offer learners the best experiences of both, the researcher suggested that teachers would benefit from professional development in the use of outdoor learning.

Similar to Marchant *et al.* (2019), recent work by Boulton and Thomas (2022) has put forward an important justification for using the extended classroom: not only does it connect children to their natural environment, but it also builds in them an empathy for nature and their impact on the environment. This way, children develop a sense of place while outdoors, something which offers opportunities for attaching new knowledge and skills from the curriculum. In the same vein, it is important to understand outdoor learning as a pedagogy. Mannion, Mattu, and Wilson (2015) suggest that outdoor learning as a pedagogy increases children's engagement with different subjects, increases their level of collaboration with others, and enhances the challenges of school in a positive, fun way. The most recent reference to outdoor learning in a Welsh Government document is in the new curriculum for non-maintained nursery settings, where outdoor learning is acknowledged as a pedagogy that enhances skills and supports the development of confidence. The outdoors is acknowledged to provide authentic opportunities for learning by stimulating many senses and therefore enabling learning to be retained for longer periods of time (Clarke, 2006).

In addition to academic benefits of outdoor learning, many studies have researched the health and wellbeing impacts of learning outdoors. Young children develop physical awareness skills such as balance and strength outdoors (Bilton and Waters, 2017) and it affords greater opportunities for schematic development, where children make sense of the world around them (Boulton and Thomas, 2022). Children of all ages develop the important skills of confidence, resilience, empathy, assessing risk, problem solving, and teamwork while learning outdoors (Boulton and Thomas, 2022; Becker, Lauterbach, Spengler, Dettweiler and Mess, 2017). A systematic review by Becker *et al.* (2017) concludes that these skills learnt outdoors, and the related self-esteem, are often transferred into real-life situations and therefore outdoor learning provides children with the lifelong skills needed for

success. Outdoor learning therefore provides holistic benefits to children and provides teachers with creative means of teaching pupils these important skills.

Teachers also benefit from outdoor learning. While the teaching outdoors offers opportunities to change pedagogies (Maynard, Waters and Clement, 2011; Barford and Daugbjerg, 2018), it also offers teachers more opportunities for collaboration with their pupils and therefore benefits relationships within the classroom too (Barford and Daugbjerg, 2018). The opportunities for using project-based learning, place-based learning, and science experiments outside is heralded as important for teachers using the Udeskole approach to learning (Waite, Bolling, and Bentsen, 2016). This curriculum-based approach where learning occurs outdoors in both natural and cultural settings is practiced in some Scandinavian settings, and teachers acknowledge that its choice of learning methods provide holistic education for their learners. The approach supports learning, increases physical exercise, social relationships and mental health and is therefore embraced by many teachers, who benefit similarly to their pupils.

However, for teachers to successfully integrate outdoor learning in their pedagogical toolkit, they need to be trained. A research project based in Thailand found that preservice teachers and ITE practitioners felt confident in using outdoor learning to support STEM learning and could see how the use of outdoor learning not only helped children academically but also ensured that they had fun while learning (Khwaengmek, Pitipornatapin, Pimthong and Bukatuny, 2021). Another study revealed that just going out of the classroom has educational potential, even if there is no planned learning (Bozkurt, 2021). Both experiential and participatory learning happens outdoors in this inclusive learning environment. The study argues that a prerequisite for all teacher education programmes should include learning environments that model the pedagogical expectations for outdoor learning, therefore showing that the pedagogy is an integral part of the entire school curriculum.

The aforementioned studies show that outdoor learning should be part of the wider teaching and learning framework. In order for this to become reality, policy – and the underlying culture about educational expectations – need to change (Passy, Bentsen, Gray and Ho, 2019). These changes will not only offer children and young people new and exciting ways to learning, but will also create more supportive and collaborative relationships with teachers. Outdoor learning can support the health and wellbeing of children and young people; taking learners outdoors can create mental and physical space away from the normalised pressures of the traditional education system. However, these changes are not always easy to make, especially when there are external policy drivers which make teachers nervous to leave the safe and academic space of their classrooms (Davies and Hamilton, 2018).

2.3. Challenges in implementing outdoor learning

Many of the studies mentioned in the previous section balance their praise for outdoor learning with caution because of the perceived and experienced difficulties in implementing outdoor learning as a pedagogy. These barriers range from financial to engrained beliefs, all of which were grappled with by researchers in this research project. Even the celebrated Udeskole approach to education faces difficulties, including what Marchant *et al.*, (2019) call people, places and resources. This includes one of the most fundamental difficulties educationalists face when thinking about outdoor education: 'real work' is thought to

happen within classrooms only, and therefore teachers are often reluctant to go outdoors (Maynard, Waters and Clement, 2011). This study, focused on Foundation Phase teachers in South Wales, revealed that although teachers could recognise the importance of using child-initiated/ -centred learning, many did not see why this could be taken a step further and performed outside their classrooms. Additionally, teachers preferred to carry out assessments indoors and saw the outdoors as spaces only for informal learning and play. This ground-breaking study has revealed that letting children guide their own learning and encouraging them to play outside is not, in itself, enough. To achieve the level of outdoor learning that really benefits children, teachers need to be really skilled at implementing outdoor learning as a pedagogy. This requires professional development and practitioners' willingness to embrace this form of educational development (Maynard *et al.*, 2011). Although some newer teachers are bolder at using outdoor learning more regularly, many still feel they need extra support from peers and administrators when leading this type of learning (Davies and Hamilton, 2018).

The reality is that many research projects arrived at similar conclusions: outdoor learning is seen as insufficient for covering all aspects of the curriculum, and teachers need more assistance if they are to use the pedagogy effectively. The study by Bilton and Waters (2017) also supports Maynard *et al.*'s (2011) conclusion that 'real work' can only be done within classrooms. Their research shows a disconnect between what teachers perceive as the educational aims and learning outcomes of education systems. The study recommends providing a clearer understanding of the aims and outcomes of educational policy, specifically with links to the aims and planned learning outcomes for all learning, including outdoor provision. This has specific relevance for the research study covered in this research report as teachers' aims and outcomes were queried as part of the survey.

Aside from teachers' beliefs about outdoor learning, other more logistical problems can get in the way of implementing this pedagogy. Mannion *et al.*, (2015) suggest that schools need comprehensive support, including financial assistance, partnership and collaborative working within and between schools, and policy support. Marchant *et al.*'s (2019) study of teachers and learners at Key Stage 2 revealed that teachers noted that safety is a concern when taking children outdoors, but that these same teachers settled into the rhythm of learning outdoors once they realised the benefits their children were experiencing. However, these teachers were also reluctant to practice outdoor learning more than strictly necessary as they felt it required additional planning which they did not want to endure. To assist with this conundrum, Marchant *et al.* (2019) suggested that teachers need support from school leadership teams and governors to embed outdoor learning within the curriculum most effectively – they need training and experiential skills to learn how to take learning outdoors without needing to change much of what is being taught or learnt. This disconnect between the teachers' perceptions about the requirements of outdoor learning and the reality of just needing to take children out of the classroom to learn places immense strain on teachers and illustrates why schools need additional training on how best to implement outdoor learning with minimal effort and maximum effect.

A study by Williams and Scott (2019) aimed to determine why secondary schools were not using outdoor learning regularly. The themes that emerged from the study include risk assessment requirements, weather, workload and time pressures, flexibility, behavioural challenges, assessment, and challenges with defining the concept. The study concluded that knowledge and skills about how to implement outdoor learning, personal development, and fluidity of movement all impact teachers' use of outdoor learning facilities. Policymakers

and schools should consider these, especially in response to the inconsistent messages teachers receive about what outdoor learning looks like at schools. The study suggests that if teachers were more confident that they knew what outdoor learning was, they would feel more confident in including it in their lesson plans.

2.4. Outdoor learning in different-aged school groups

Opportunities and expectations for outdoor learning are noticeably different for different-aged year groups globally. In Wales, Boulton and Thomas (2022) recognise how early years curricula rely on outdoor learning as part of their core pedagogies, however, this is not the case for all year groups. Non-maintained nursery settings have recently received new curricula documents which makes a clear case for the role of outdoor plan and learning as important contributors to holistic education; they are seen as opportunities that support the provision of, and delivery of the curriculum (Welsh Government, 2022). In these documents, the exploration of the environment is seen as a key driver for learning and through this, children develop a keen sense of belonging, or *cynefin*. The curriculum documents go further to say that children at this young age need to explore the world with awe and wonder in order to ignite a curiosity about the world which cannot be achieved indoors (Welsh Government, 2022).

However, the strength of these messages of commitment to outdoor learning are noticeably reduced as the curriculum progresses. As children get older, there are less references to the need for outdoor learning; instead, the concept is portrayed as more of a 'bolt on' to the 'normal' curriculum instead of something that is at its heart. Even with the development of the new Curriculum for Wales, there are very few references to the benefits and need for outdoor learning in the curriculum. For this reason, this research report reflects on a study that was designed for the involvement of all school age-groups, with the aim of comparing the uses of outdoor learning throughout the life of the child.

2.5. Conclusions

Schools have a vital role to play in providing children and young people with opportunities to experience time in a natural environment (Natural England, 2012). The challenges of achieving this include the risk of accidents, cost of delivery and pressure from delivering the curriculum, confidence of teachers and their self-efficacy, along with access to training and CPD and use of the outdoor environment within school grounds and further afield. Benefits were seen as helping raise education standards, students' improved performance in subjects such as Maths, Science, Reading and Social Studies, and it was felt that outdoor learning helped enrich other subjects taught inside the classroom. Additionally, outdoor learning can be seen to increase creativity and support positive mental wellbeing and provide a greater awareness of environmental issues and could help community cohesion. Disadvantaged pupils could be seen to have the most to gain so this lack of green space/ outdoor environment can impact their wellbeing more dramatically (RSPB, 2012). Natural England (2012) conclude that quality CPD needs to be provided for teachers to improve confidence and lesson quality. While the benefits of outdoor learning are clear, there does not seem to be compelling evidence on why some schools utilise outdoor learning and others do not.

The literature shows that outdoor learning has significant benefits for staff and pupils and can improve the health, wellbeing and educational outcomes for children and young people (Gilchrist and Emmerson, 2016; Barford and Daugbjerg, 2018; Marchant *et al.*, 2019,

French *et al.* 2021). However, the literature also reports evidence of barriers to using outdoor learning. There is a perception by some teachers, that 'real work' is seen to take place within classrooms (Maynard *et al.*, 2011) and other barriers described are often related to policy, people, place and resources (Barford and Daugbjerg, 2018; Marchant *et al.*, 2019; Williams and Scott, 2019). While there is evidence that teachers value the use of outdoor learning, studies also report the lack of confidence, curriculum restraints and risks associated with the outdoors as perceived barriers (Davies and Hamilton, 2018).

Key themes that can be drawn from the literature also include the need for further training and development for teachers, which will improve their confidence in its use as a teaching approach within the curriculum. Support is needed from senior leadership teams to encourage school-wide culture change around the use of outdoor learning. More importantly, education inspectorates need to place a higher value on the use of the outdoors to support learning and teaching (Bilton and Waters, 2017).

This review emphasises that approaches to outdoor learning in different settings varies significantly. There appear to be different opportunities and approaches between settings and a stronger evidence base in the early years/primary settings. The development of Curriculum for Wales (WG, 2021) should recognise this and provide the chance to incorporate the benefits of outdoor learning across the age range.

There is little evidence to suggest that teachers have taken up opportunities to take learning outdoors in the UK. Outdoor learning is not often seen as the favourable pedagogy and links between outdoor learning and the curriculum are not often considered (Dolan, 2015). MacQuarrie (2016) suggests that there is lots of research to support how learning can be enhanced in the classroom, but very little is shared about how to enhance learning outdoors. This engrained, cultural misunderstanding of outdoor learning is the context in which our research project is situated.

3. Methodology

3.1 Research Design

The research design for this project was based on the design and data collection tool used for *Teaching, learning, and play in the outdoors: a survey of school and pre-school provision in Scotland* (Mannion, Mattu and Wilson, 2015). It used an approach that has proven to be both effective and reliable when researching outdoor learning provision in schools in Scotland. The study in Scotland which began in 2006, was administered longitudinally, and the results provided a considerable data set to further support outdoor learning practice and provision. The study documented in this report has the potential to establish a baseline for such data in Wales.

The original project focused on providing an understanding of the changing nature of the scope and range of formal outdoor experiences in schools and pre-schools by asking schools to self-report of their activities (Mannion, Mattu and Wilson, 2015). Our study has focussed on 3 research questions:

- **RQ1** What are the opportunities afforded by outdoor educational experiences for different kinds of learning, within different subject areas, disciplinary and interdisciplinary foci for learning?
- **RQ2** How is provision for outdoor learning distributed?
- **RQ3** What are the effects of going outdoors on the quality of learning for different kinds of setting and provision?

Our research project has utilised an approach with the teacher at the centre of the data collection. Data was collected through an on-line survey which was analysed both quantitatively and qualitatively. A convenience sample was used, making use of the established ITE contacts of the three HEIs involved. The required sample size was calculated as 91 schools at a 10% confidence interval with a 90% confidence level, and this was broken down proportionally to the types of schools listed (secondary, special, primary, etc.). The range of schools in a geographic area related ITE partnerships, represented the language bases of the schools in those areas (and, as such, all materials were provided bilingually). The team also contained several Welsh speakers allowing for full bilingualism within the data collection process. All schools that participated were mapped against the Welsh Index of Multiple Deprivation (WIMD) and the Rural/Urban Classification (2011) to monitor representativeness in comparison to national demographics. It was envisioned that the survey would have the capacity to be widened for potential future studies in terms of longitudinally and participation (as has been done in Scotland over three cycles since 2006).

Ethical approval was obtained through Bangor University ethics committee in November 2021 and a letter of ethical consent shared with the other HEI partners, who also logged the approval with their own appropriate ethics committee. The information sheet and consent form for participants that were part of the ethical process are displayed in [Appendix 1](#).

3.2 Adapting the research approach

The first step for the project team was to explore the original research design and data collection strategy undertaken in the Scottish study. Group discussions developed a more appropriate approach, set of questions, and contextual references for the Welsh context.

Minor modifications were made to survey questions to reflect the Welsh curriculum and outdoor learning opportunities in Wales. The original and adapted survey tool are displayed in [Appendix 2](#) and [3](#).

The table below shows how the research design for this project compares to the original study.

Table 1- Research design stages and comparison

Stages of Research Design	Teaching, learning, and play in the outdoors: a survey of school and pre-school provision in Scotland	Teaching and learning in the outdoors: the current state of outdoor learning in schools in Wales
Preparing schools	Guidance provided on how to engage with the survey. Participation is voluntary. Anonymity of participants assured	Information sheet and consent form with contact details provided to each school prior to engagement with the project. Participation is voluntary. Anonymity of participants assured
Sample	Three random samples for pre-school, primary and secondary were generated using school size and urban-rural location of schools as criteria	The sample is taken from partnership schools linked to each HEI and personal contacts
Data Collection	Paper based survey	Online survey
	Self-reporting survey tool completed by teachers	Self-reporting survey tool completed by teachers.
	Weekly recording of formal outdoor activities capturing activity in the school grounds, local areas, and residentially. Delivery by teachers or other staff	Weekly recording of formal outdoor activities capturing activity in the school grounds, local areas, and residentially. Capture of the adult roles that supported the delivery of sessions
	Surveys conducted in May and June	Survey conducted from late February through to early April due to timing constraints of the project. (Anticipation of impact on the range and volume of activities)

3.3 Sampling approach

The sample size suggestions for this research project were calculated using the Qualtrics online sample size calculator.

Table 1 Study sample calculation

Classification of school	Population	% Of total population (To 1sf)	Sample size required to match % of total population
All schools	1553	100	91
Primary	1219	78	71
Secondary	182	12	11
Independent	80	5	5
Special/ALN	40	3	3
Nursery	9	0.6	1
Middle	23	2	2

Due to time constraints the study team were unable to approach the sample size initially calculated and as a result 50 schools were sent a study information pack and an invite to take part in the online survey. A breakdown of the classification of the schools invited, along with their WIMD and rural/urban classification are provided in table 3. However, the schools approached were considered to be appropriate to provide indicative information across a range of types of schools as the RQs indicate is relevant.

Table 2- Classification of schools approached to take part in survey

Classification of School	Number approached	WIMD percentile	Rural/Urban
Nursery	2	1 = 30-50% most deprived 1 = 50 % least deprived	1 = Rural 1 = Urban
Primary (including Welsh Medium)	24	2 = 10% most deprived 2 = 10-20% most deprived 1 = 20-30% most deprived 5 = 30-50% most deprived 14 = 50 % least deprived	8 = Rural 16=Urban
Secondary including Welsh Medium)	14	2 = 10% most deprived 1 = 10-20% most deprived	4 = Rural 10 = Urban

		1 = 20-30% most deprived 2 = 30-50% most deprived 7 = 50 % least deprived	
Special	7	5 = 50 % least deprived 2 = 10-20% most deprived	1 = Rural 6 = Urban
Independent	2	1 = 30-50% most deprived 1 = 50 % least deprived	1 = Rural 1 = Urban
Forest	1	50 % least deprived	Urban

3.4 Data collection and evaluation of the survey tool

All schools that were selected to be approached were emailed a brief overview of the study, participant information sheets, consent forms and a link to the online survey, all of which were sent in both English and Welsh. Schools were asked to support the study by filling in the short online survey each week for a period of eight weeks.

The bilingual online survey recorded (n=12) completed English responses over the duration of the 8 weeks, demonstrating a low response rate. Each school was sent an email invitation to take part in the survey and then two further reminders invitations each subsequent week. The recurrence response rate was also low, with only (n=1) school completing the survey over a four-week period and the other (n=8) schools providing a singular response. In total, (n=9) schools took part in the survey; (n=4) Primary schools, (n=2) Secondary schools, (n=2) Independent schools and (n=1) Special school. In accordance with WIMD (2019) mapping, 2/3rds of the schools were situated within the 50% least deprived WIMD areas and a 1/3 from the 30 – 50% most deprived. When mapping the schools in relation to their rural/urban classification (2011), (n=7) schools were situated within an urban/town location and (n=2) within a rural town and fringe.

From a data collection perspective, using the Qualtrics online sample size calculator, the data sample falls well below the 10% confidence interval, at the 90% confidence level. However, the small number of respondents does offer a useful indication and snapshot of the current state of outdoor learning in Wales, despite limited sample size.

The evaluation was two-fold: the team wanted to consider the use of the adapted survey tool in this context, and consideration of how the survey may act as a pilot for use with schools in Wales with the possibility of expanding the survey further.

The results of the survey are discussed in the Findings section.

4. Findings

The following chapter provides the findings that have emerged from the small sample of survey responses in relation to each outdoor learning session undertaken and recorded by a school. A breakdown of the responses is provided following the order of the survey questionnaire itself. As a result of the limited response, a further section amalgamates the answers provided from the one school that completed the survey consecutively over a 4-week period.

4.1 Sessions Recorded

The received survey responses from each school displayed the year groups that took part in each outdoor learning session. These ranged from Reception class to Year 14. The school that recorded four outdoor learning sessions, delivered these to Year 4 pupils.

Table 4- Number of year groups taking part in an outdoor learning session

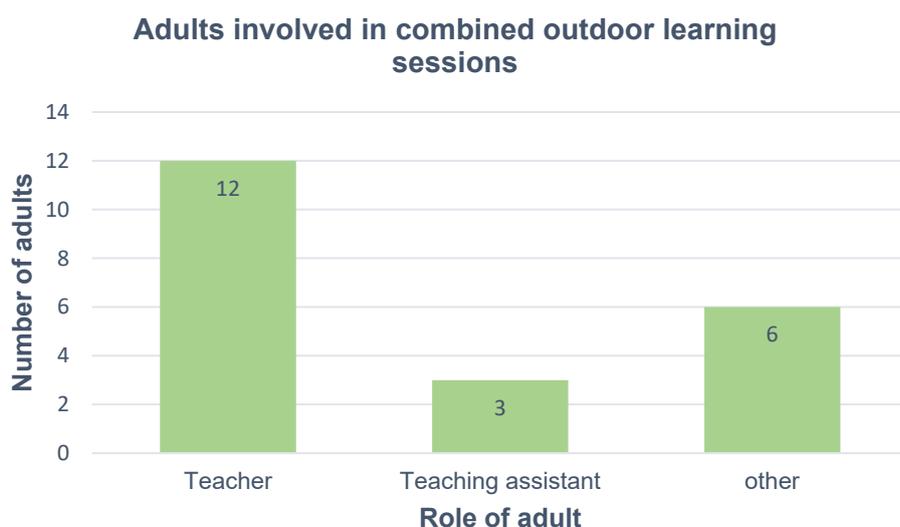
Year groups from each school that took part in an outdoor learning session	Number of completed outdoor learning sessions
Reception	1
Year 1	1
Year 2	1
Year 4	4
Year 6	1
Year 7	1
Year 8	1
Year 12	1
Year 14*	1

Individual outdoor learning session times ranged from 30 minutes through to 6.5 hours. The two longest recorded sessions (6 hours and 6.5 hours) were delivered by the independent schools, whereas the shortest outdoor learning session (30 mins) took place within a primary school.

Class sizes ranged from (n=4) to (n=29). The smallest class size was recorded in a special school which could account for the small number of pupils and the largest class size within a primary school.

Adults offering supervised support within each outdoor learning session ranged from (n=1 – 4). Along with a teacher and teaching assistant being present, 'other' adults recorded included outdoor instructor, trainee teacher or associate teacher (figure 3).

Figure 1- Adults involved in combined outdoor learning sessions



4.2 Focus of Sessions

The survey sought to understand more about the focus of the outdoor learning sessions the schools were delivering and provided 13 options and 'other' for recording purposes. The options asked the school to record whether the focus of their session was planned and whether it took place. Table 5 below shows the responses recorded. As can be seen the dominant foci were curriculum links and teamwork. The curriculum links will be explored further below, but the teamwork aspect reflects a more general or traditional view of outdoor learning being a particularly effective pedagogy in developing teamwork. Previous iterations of the Curriculum for Wales (pre-2022) have highlighted the value of adventurous activities (which often use an outdoor learning pedagogy) in the physical education curriculum for delivering these type of outcomes. However, it is also important to note that in the sample, only half of the sessions with a curriculum links as a focus actually took place. This may be due to practical restrictions or barriers (such as inclement weather) or that the curriculum aims were achieved in other ways. The higher number of sessions with these two foci could be an indication of the understanding of school staff's understanding of outdoor learning as an effective pedagogy to deliver these objectives. The greater proportion of the planned sessions with a focus on 'Nature/sense of place', 'Individual/personal development' may also imply that these aims were not seen as achievable by other methods so the sessions had to go ahead. Of note there were also some foci where more sessions were delivered than planned, implying either a more spontaneous approach (and hence greater confidence) in utilising outdoor learning for these objectives, or possibly less accountability and hence need for justification of these types of session.

Table 3 Focus of outdoor learning sessions

No 7-Focus of session	Planned	Actually took place	Planned and took Place
Curriculum links	10	5	5
Teamwork	10	7	7

Nature/sense of place	5	4	4
Practical activities/skills	8	5	5
Individual/personal development	4	4	4
Play/enjoy/leisure	7	8	7
Personal/social wellbeing	4	7	4
Conservation of nature/cultural heritage	2	1	1
Society/social culture	2	0	0
Study/learn about Wales	2	0	0
Influencing change	1	1	1
Adventure activities	1	1	1
Creative works	1	1	1
Fieldwork	0	0	0

It is worth noting that in the play/enjoyment/leisure and personal/wellbeing sections, participants recorded more activities than had originally been planned.

4.3 Links to the Curriculum

When asked about the curriculum areas their outdoor learning sessions addressed through Areas of Learning in Wales, participants recorded the following:

Table 6- Outdoor learning session links to the curriculum

No 8-Curriculum areas addressed through Areas of Learning in Wales	Planned	Actually Took place	Planned and Took Place
Health and Wellbeing	7	5	5
Language/Lit and Communication	7	5	5
Maths and Numeracy	3	2	2
Humanities	3	2	2
Science and Tech	3	3	3
Expressive Arts	1	2	1

In the Expressive Arts, although one session was planned and took place, it is noted that an additional activity focused on the Expressive Arts was also recorded but unplanned. The higher proportion of sessions planned around health and well-being may indicate a greater understanding of the physical and mental health and well-being benefits of outdoor learning sessions, or perhaps a greater familiarity with previous iterations of the Curriculum for Wales which focussed on the adventurous activities (which often utilise an outdoor learning

pedagogy) and appear in the physical education section. The physical education section is seen as one pre-cursor of the 2022 AoLE Health and Well-being. For the reported sessions focussing on literacy and communication, it is unclear whether it was the literacy aspect or communication that was the greater focus and whilst the AoLE is titled 'Language literacy and communication', it may be school staff interpreted the 'communication' as more concerned with teamwork and verbal/non-verbal communication rather than the traditional written means often seen in language-based sessions. It may also be that specific resources were used which encourage creative writing about the outdoors/nature or use the environment as a stimulus for some reflective or creative writing. Somewhat unexpected were the relatively few sessions planned to deliver humanities objectives as the Humanities AoLE in the Curriculum for Wales 2022 is one area where the guidance and supporting documents specifically state that children should be given opportunities to learn outdoors. This may reflect less familiarity with the Curriculum for Wales 2022 documentation, or that there are other barriers to using outdoor learning in this area. Frequently humanities teaching outdoors involves more technical field work which can require specialist skills or equipment, or that are seen less appropriate for primary school aged children (the majority of sessions reported to the survey were with primary aged children).

4.4 Links to the Four Purposes

Schools recorded how each of their outdoor learning sessions linked to the four purposes. It is possible that one session can link to one or more of the four purposes. The links to the purposes appear stronger with two of the purposes, although further investigation is needed to draw clear conclusions as to why this is. As previously mentioned, school practitioners are still becoming familiar with the Curriculum for Wales 2022 and hence (for the context of this question), it's purposes. Some schools view the purposes as topics or things to tick off in every session, some see some purposes in some sessions and not in others, some may use the four purposes as a justification for implementing an outdoor learning pedagogy, and some are keen to provide evidence of embedding the four purposes for inspection purposes. It may be a greater understanding of the way the four purposes function to underpin curriculum is required before this question can be fully understood.

Table 4 Number of sessions linked to one or more of the four purposes

No 9- Links to the four purposes	Number of sessions linked to the four purposes
Ambitious capable learners...	9
Healthy, confident individuals	9
Enterprising, creative...	6
Ethical, Informed....	3

When exploring pupil engagement in comparison to indoor activities, children's engagement in activities within outdoor learning spaces were reported by (n=4) schools as the same as normal and (n=8) schools as more than normal.

4.5 Awards/Schemes

Schools were asked to report if any of their outdoor learning sessions related to an award or scheme, their school was involved in.

Table 5 Award and scheme related to outdoor learning session

Awards/schemes	Number of schools
Eco schools	3
John Muir	1
D of E	1
Healthy schools	2
Other	1 (no description given)
Princes Trust	0
ASDAN	0

These results demonstrate no clear links between the outdoor learning session planned and any award scheme, which indicates that either the sessions were not seen as needing additional justification as may be gained from association with an award scheme, or that working towards a set of criteria from an external award is not practical or valued by the schools responding to the survey. This is a little unexpected as organisations such as the John Muir Trust have invested significantly (supported by Natural Resources Wales) in the last 2 to 3 years in raising the profile of the John Muir Award and engaging with more schools. Conversely there has been a documented decline in uptake of the D of E due to the pandemic restrictions on travel and expedition work. This is slowly recovering but is also hard to comment on as it is only available to those in year 9 or above, and the majority of the sessions planned and reported in the survey were for children and young people younger than this age. Generally the lack of connection to an award scheme could be seen to support the view that curriculum aims are a strong enough justification to deploy an outdoor learning pedagogy.

.6 Impact on Learning

Schools were asked to report if they felt their outdoor learning session enhanced any of the below 'Impact' elements displayed in table 9 when compared to learning indoors. School responses reported the most common impact on their pupils' learning through their outdoor learning session was personal/choice followed by challenge/enjoyment.

Table 6 Impact of outdoor session on learning

Impact	Number of school responses
Progression	6
Relevance	6
Challenge/enjoyment	7
Breadth	5
Personal/choice	8
Coherence	1
Other- engagement in lower ability	1

4.7 School recording four Outdoor Learning sessions over the period

One primary school recorded (n=4) consecutive outdoor learning sessions during the eight-week survey window. All sessions involved a teacher and a trainee teacher. All sessions involving year 4 pupils were mixed with between (n=12-14) males and (n=12-16) females in each class. Sessions outdoors lasted for 2 hours, 4 hours, five hours and five and a half hours. The following short section displays the responses from this school.

Table 7- Focus of outdoor learning session

Focus of session	Session 1	Session 2	Session 3	Session 4
Personal/social wellbeing	Took place but not planned	Planned and took place		Planned and took place
Play/enjoyment and leisure		Planned and took place	Planned and took place	
Curriculum links	Planned but did not take place	Planned and took place	Planned and took place	Planned and took place
Teamwork/working with others/developing groups		Planned and took place	Planned and took place	Planned and took place
Practical activities/skills			Planned and took place	Planned and took place
Play/enjoyment/leisure	Planned but did not take place			Planned and took place
Individual/personal development				
Nature/Nature-society/Sense of place		Took place but not planned		

Table 10 identifies a Curriculum link focus was planned for all (n=4) sessions delivered by the school, however not all planned sessions successfully took place in (n=3). . Personal and social wellbeing took place in (n=3) sessions. Teamwork/working with others/developing groups were planned and took place in (n=3) sessions. No sessions focussed on society/social culture, study/learn about Wales, Influencing change and adventure activities.

Table 8- Curriculum areas addressed during outdoor learning sessions

Curriculum areas addressed through Areas of Learning in Wales	Session 1	Session 2	Session 3	Session 4
Health and Wellbeing	Planned but did not take place	Planned and took place	Planned and took place	Planned and took place
Science/Technology		Planned and took place		Planned and took place
Languages, Literacy and Communication		Planned and took place	Planned and took place	Planned and took place

Humanities			Planned and took place	
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All sessions were planned to address Health and Wellbeing, however the teacher felt only (n=3) achieved this objective. Languages, Literacy and Communication were planned for (n=3) sessions and the teacher felt these were achieved, followed by Science and Technology and Humanities which were planned and did take place.

When considering the links to the four purposes, this school reported that all sessions focussed on healthy, confident learners, (n=3) sessions focussed on ambitious, creative learners, (n=2) sessions focussed on enterprising, creative learners and there were no sessions that focused on ethical, informed citizens. When comparing the sessions to learning indoors, children's engagement in activities outdoors during sessions 1 and 2 were 'about the same' and 'more than normal' during sessions 3 and 4. Only (n=1) session focused on the healthy school's scheme.

When looking at the impact on learning outdoors, when compared to learning indoors, sessions 2,3 and 4 were reported to enhance varied elements for pupils. Session 2- enhanced breadth and challenge and enjoyment, session 3- progression, breadth, and session 4- breadth, personal/choice, relevance and challenge and enjoyment.

To conclude, the sample size is very small and given that only one school recorded four sessions over a four-week period, with the other eight schools only recording one session, it is difficult to draw meaningful conclusions relating to the current state of outdoor learning in schools in Wales. That being said, for those schools that took part in the survey, the findings demonstrate that schools acknowledged that they identified and planned a focus for the outdoor learning sessions. The highest areas of focus for sessions were curriculum links (n=10), teamwork (n=10), practical activities/skills (n=8) and play/enjoy/leisure (n=7) with influencing change, adventure activities and creative works only featured as a planned focus in 1 session respectively. Furthermore, the links to the curriculum were addressed through the Areas of Learning in Wales with health and wellbeing (n=7) and language/literacy and communication (n=7) being the areas planned more frequently. The findings also demonstrate that for those schools that responded to the survey, frequent links to the four purposes were reported, however, ethical, informed citizens of Wales and the world was only recorded in 3 sessions overall.

The findings demonstrate that when exploring pupil engagement in comparison to indoor activities, engagement in activities within outdoor learning spaces were reported in 4 of the 12 sessions (33.3%) as the same as normal, while in 8 of the sessions (66.6%), schools reported increased engagement in the outdoors. Findings also show that when considering whether the outdoor learning session enhanced learning, schools reported a range of 'impact' elements such as personal/choice (n=8), challenge/enjoyment (n=7) and progression and relevance (n=6 respectively).

Therefore, while the sample is small, there are some positive findings in relation to planned focus for sessions, links to the curriculum and the four purposes, however, links to ethical, informed citizens of Wales and the world were limited. The data, although limited, reports increased engagement in two thirds of sessions when delivered in the outdoors.

5. Discussion

This discussion revisits the research aims and objectives, methodology and findings of this project. It draws together key messages and conclusions. It also presents recommendations that will inform future research and practice in the area of outdoor learning.

The purpose of this research was to investigate the current state of outdoor learning in schools in Wales and explore the validity of a study design used in Scotland in the Welsh context. The research sought to consider the opportunities afforded by outdoor educational experiences for different kinds of learning, within different subject areas, disciplinary, and interdisciplinary foci. In addition, the research looked at how outdoor learning is distributed and the effects of going outdoors on the quality of learning for different kinds of setting and provision. The study design is based upon the *Teaching, learning, and play in the outdoors: a survey of school and pre-school provision in Scotland (2014)* report, with this research investigating Welsh provision directly. The study design was amended slightly for the Wales context and was carried out at a different time of year due to the project timescale constraints. Important lessons have been learned from the project about how to develop the study design and engage participants.

The data analysis investigated the use of outdoor learning within schools across Wales. The sample size for 10% confidence intervals was $n = 91$, however the number which was achieved was $n = 9$ of total schools, therefore these findings cannot be true to the proportional mean across Wales; they can, however, provide an understanding from this sample. This relatively low response rate may be explained by the misconception by some teachers, that 'real work' is done within the classroom (Maynard *et al.*, 2011), and that barriers related to policy, resources, confidence, curriculum restraints, and risks associated with outdoor learning pose issues relating to the feasibility of outdoor learning as a sustainable and effective pedagogy (Barford and Daugbjerg, 2018; Marchant *et al.*, 2019; Williams and Scott, 2019; Davies and Hamilton, 2018). It may also be that teachers did not have the time or motivation to complete the survey.

The initial Scottish study from Mannion, Mattu and Wilson (2015) targeted schools in the months of May and June in 2006 and 2014, however our study targeted schools between February and March (8 weeks). Conducting data in such different term times can result in conflicting response rates and responses. Response rates are likely to be impacted by the prevailing weather conditions in terms of how many schools engaged in outdoor learning session at the time of year, and the responses themselves may also be impacted (for instance duration of session, frequency of sessions) as they may depend on the availability of suitable clothing or footwear for the weather. Mannion, Mattu and Wilson's (2015) research project was repeated in the months of September 2021 and October 2021 which presents as a very different climate to the months used for our data collection: February and March.

School responses to the survey varied (Primary $n = 4$, Secondary $n = 2$, Independent $n = 2$ and Special $n = 1$), therefore offering an insight into different academic settings. Our literature review indicates that outdoor learning is very prevalent in nursery settings, but we received no responses from schools in this category and therefore we cannot analyse and include their experiences. Despite attempts to involve schools from areas of deprivation, no schools in the 10% most deprived, 10-20% most deprived, and 20-30% most deprived responded to the survey (WIMD, 2019). Further investigation is needed into these contexts

as suggested by RSPB (2012) as these pupils may benefit significantly from outdoor learning in the spheres of academics and wellbeing, due to the lack of green/outdoor environment in their area.

The low response rate for this research project has meant that our study serves primarily as a pilot. Although some conclusions can be reached from the literature review and data collected, these claims do not attempt to portray the complete picture of outdoor learning in Wales. Instead of answering each research question independently, this discussion now aims to present findings from the data collected without presuming any further conclusions based on the lack of responses.

5.1 Indicative reflections from literature review

The literature review provides various perspectives for reflection on the findings. The field of literature reviewed indicates that schools play a vital role in providing children with opportunities to explore and learn in the natural environment. Additionally, outdoor learning has proven to offer significant benefits for both staff and pupils in terms of their health, wellbeing, and academic development (Gilchrist and Emmerson, 2016; Barford and Daugbjerg, 2018; Marchant *et al.*, 2019, French et al. 2021). Although many studies acknowledge the benefits of this type of experience, the perception that it is difficult to organise, resource and planning-intensive, and potentially risky, is pervasive (Barford and Daugbjerg, 2018; Marchant *et al.*, 2019; Williams and Scott, 2019). A key theme that ‘real learning’ is done in classrooms was visible throughout the literature review and reflected Maynard *et al.*’s (2011) research outputs.

The reviewed literature indicates there are significant gaps in understanding what outdoor learning is and how it can be used to cover the curriculum. Teachers’ reservations to employ the pedagogy may reveal their disinterest in trying new pedagogies, their unfulfilled needs for support in trying new approaches to education, and their possible misunderstanding of the topic entirely; it could even be a compilation of all three. For this reason, our study aimed to grasp what teachers in Wales understood about outdoor learning and how they implemented the practice in their lessons.

Despite outdoor learning being recognised supporting lifelong learning and development (Boulton and Thomas, 2022), practitioners appear to be underprepared, and lacking in knowledge and confidence to use outdoor pedagogy (Davies and Hamilton, 2018). Appropriate professional learning and development in the field of outdoor learning is needed to empower practitioners in their design and delivery of the Curriculum for Wales (WG, 2021). To support practitioners in this pedagogical realm, we recognise a paradigm shift is required and thus suggest:

- Professional learning communities in outdoor learning and the curriculum
- Observations of colleagues’ good practice in order to enhance confidence
- Collaborating to co-construct outdoor learning lesson plans

5.2 Discussion from collected data

Our data indicates that outdoor learning is distributed across all age groups, settings, and teaching staff. The survey offered teachers many opportunities to indicate how their outdoor learning activities related to the different foci of each session, curriculum links for each

session, and the 4 purposes of education in each session. Teachers were asked to indicate whether their aims for their outdoor learning were planned to deliver any of these topics and whether they were achieved. The collected data indicates an array of planned and achieved aims for each of these three focus areas, which may indicate that teachers understand the versatility of outdoor learning. However, this assumption can be contradicted by the fact that many responses were similar in that many recorded 'practical activities/skills' and 'play/enjoy/leisure' as '[foci of the sessions](#)', therefore, hinting at the physicality of conventional outdoor learning understandings. To further this narrative, data collected in the '[links to the curriculum](#)' section of the survey are all relatively low (out of a total of 12 responses), which may indicate that teachers are not confident that outdoor learning can sufficiently address all areas of the curriculum. With only two of the '[four purposes](#)' being significantly selected, teachers have also indicated a bias towards purposes that lean towards physicality and therefore show how their understanding of outdoor learning does not necessarily relate to the whole curriculum. Finally, when asked about '[impacts on learning](#)', responses all fell below the 75th percentile of believing that outdoor learning enhances the quality of learning (compared to learning indoors).

Although our response rate is low, the collected data still hints at how teachers do not believe outdoor learning can effectively cover all aspects of the curriculum and learning. This may be due to a lack of understanding of the term 'outdoor learning' and how it can be used as a pedagogy to effectively teach the curriculum. Without knowledge about what outdoor learning is, how it can be used, and how it can benefit teaching and learning, teachers may not intentionally use it. Teachers may use outdoor learning strategies and not categorise them as such as was evidenced in the '[foci of the sessions](#)' when learning took place as a by-product and had not been planned. Without skills and practice, even theoretical knowledge of outdoor learning (like that learnt by trainee teachers in associated PGCE and ITE programmes) may not turn into actual pedagogies. There needs to be a systematic approach to embedding meaningful learning. Our study reveals a similar narrative to that postulated by Maynard *et al.* (2011): teachers believe that 'real work' and 'real learning' happens indoors and therefore outdoor learning is more of a bolt-on than an inclusive pedagogy.

For these reasons, our study has demonstrated the need for teachers and other education stakeholders to be educated about how outdoor learning can be used as a teaching approach to deliver the whole curriculum. Additionally, practitioners need to learn how, when, and why to use outdoor learning to benefit the development of children and enhance teaching and learning experiences. If teachers and support staff believed in the value of outdoor learning and were supported in their endeavours to accomplish these aims, it is possible that outdoor learning would turn from a fringe add-on to a mainstream pedagogical practice throughout Wales.

6. Conclusions

Without a working definition for outdoor learning, it may be difficult for schools to establish outdoor learning as a pedagogy to become part of their strategic plans. Official support on this matter was last produced in 2009 and relates only to the Foundation Phase (Welsh Assembly Government, 2009). With the introduction of Curriculum for Wales (Welsh Government, 2021), and the resultant independence with which schools can create their curricula, our study provides reasons to argue that schools need updated guidelines on how and what outdoor learning can add to educational experiences, enhance teaching and learning, and maintain wellbeing in schools. An example of this type of guidance is *Building your Curriculum: Outside and In* (Education Scotland, 2020), which offers guidance, not requirements, for schools to follow. With documents like these, teachers may begin to believe what Maynard *et al.* (2011) suggest: that providing children with the opportunity to explore and play in the outdoor environment is not, in itself, enough. This call for learning to be focussed, rather than ad-hoc, is further supported by Gilchrist and Emmerson (2016) who highlight that schools require support to build their knowledge and confidence to deliver curricular learning outdoors in a creative and effective way; thus, recasting outdoor learning as a pedagogy.

6.1 Limitations and recommendations

6.1.1. Timing of data collection

The decision to rework and use the Scottish survey for our data collection was based on its proven validity and reliability; however, reflections on this decision have since been reconsidered. The Scottish survey relied on teachers' willingness to participate, their knowledge about outdoor education, and time. Not only did our study happen at a time of year when outdoor learning is less likely to occur because of the weather, turning the survey from paper- to computer-based may also have contributed to the low response rate. For these reasons, we recommend that a new survey is designed to serve the conditions in Wales.

6.1.2. Limited responses

Despite efforts being made to incorporate responses from a diverse range of educational institutions, only a limited number responded to the survey. It is for this reason that the data presented in the Findings lacks depth and breadth, does not represent nursery school settings, and represents far less than the expected response rate. Additionally, schools' busyness and possible confusion about outdoor learning may have hindered their engagement with the questionnaire. We hope that continued research within schools normalises staff involvement in research projects and therefore encourages staff to engage more with these types of projects.

A longer time frame for recruitment and school participation needs to be supported to engage with any future study. We also recommend the use of funding to release a member of staff from each participating school to discuss the overall study, its aims and objectives, and to establish a baseline for what to include and exclude for outdoor learning, would all benefit the design of a further research study. We hope that this will help teachers grasp a better understanding of the topic and show them how easy and worthwhile it is to participate.

There is an increasing amount of research and inquiry in schools in Wales, and this has an impact on schools' capacity to engage with a range of research projects. It is important to be mindful of this and the impact that it can have on engagement. The short time period given for our study limited our ability to adapt the survey instrument according to these recommendations and therefore we did not receive the high number of responses expected. Therefore, the Scottish survey was a good starting point, but the timescale for this project, the time of year, and the time it took to complete the online survey all negatively affected our response rate and data collection.

Due to the discussed limitations to the study, the data that was received was complemented by secondary data in the Literature Review to present a clearer picture of outdoor learning in Wales.

6.2. Recommendations for further study

We recommend reproducing the study with a longer data collection period during the different school seasons, and investigating how planned sessions may have been affected, adjusted, postponed or unfinished due to the weather. In addition, surveys should be circulated at the beginning of terms so that teachers, headteachers and teaching assistants can consider adding outdoor learning into their term curriculum early, rather than during the academic term. This will avoid biasing the data according to an opportunistic window of behavioural flexibility and change (Behavioural Insights Team, 2014). This will then facilitate the use of outdoor learning with the Curriculum for Wales (Welsh Government, 2021) to coincide with further CPD outdoor learning courses (French *et al*, 2021) to be confident and committed to deliver the provisions (RSPB, 2012). Additionally, we recommend:

- Review research questions to explore practitioners' understandings of outdoor learning, to produce a working definition, and to investigate perceived barriers to outdoor learning
- Review methodology including data collection tool and timeframe
- Workshops with participating schools

6.3. Recommendations for policy

- Provision of updated guidelines for using outdoor learning as an approach to teaching the curriculum
- Review ITE and PGCE curricula to include outdoor learning as a fundamental part of pedagogical practice
- Prioritise professional learning opportunities for outdoor learning pedagogy as part of the implementation of the Curriculum for Wales

6.4. Recommendations for practice

- Creation of professional learning communities in outdoor learning and the curriculum
- Observations of colleagues' good practice to enhance confidence
- Collaborating to co-construct outdoor learning lesson plans and approaches to assessment outdoors to reaffirm that 'real work' can take place outdoors

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8. Appendices

Appendix 1: Information sent to participants

Teaching and learning in the outdoors: the current state of outdoor learning in schools in Wales

This is a Welsh Government-funded collaborative research project undertaken by three universities (Bangor University, University of South Wales and Wrexham Glyndwr University). Your school has agreed to take part in the study and researchers from *Bangor University* will be collecting data from your school. This research seeks to understand the impact of the COVID 19 pandemic on the health and well-being of learners' and teachers

How will we do this?

1. Researchers from the 3 universities will be collecting, and analysing data gathered from staff at the school.
2. Researchers from the research team will ask staff to participate in on-line survey over a set period of up to 8 weeks.
3. All researchers from the School of Education have a current DBS certificate.

How will we use the information?

We will use the information to understand how outdoor learning is used in schools in Wales, how it is being deployed to support children returning to school during the Covid 19 pandemic and who is providing the outdoor learning activities.

1. We will share our findings with our collaborating universities (University of South Wales and Wrexham Glyndwr University) and a final report on our findings will be sent to Welsh Government at the end of March 2022.
2. We may also present the information, including anonymized quotations, at future seminars, conferences and include it in publications.
3. All information will be pseudonymous i.e. participants' real names will not be used. Only the researchers will have access to the names of individuals participating in the project.

No individual will be named in any report, conference presentation or other publication. However, anonymity cannot be completely guaranteed for those participants taking part in group interviews or group discussions, since they will be known to the other participants.

What are your rights and participants' rights?

1. Participation in this project is voluntary. Staff are invited to participate but they are not required to do so. There will be no adverse consequences for anyone who chooses not to participate.
2. If staff agree to participate but later decide against it, they may do so at any point prior to presentation or publication. To enable this to happen, it is necessary to keep a record of participants' names so that their contribution can be traced and redacted if that is what they wish.

Safeguarding

1. If any information is disclosed during the data generation which gives rise to concern about an individual or child's safety or wellbeing, the matter will be referred to the school's safeguarding officer.

2. If any information is disclosed regarding crime or terrorism, the matter will be referred to the school and the police.

Security

All data collected during the project will be securely stored on a password-protected system according to **Bangor University** policies. Any paper copies of information will be securely stored in a locked place.

Further enquiries: Graham French g.k.french@bangor.ac.uk

Staff consent form

Title of project: **Teaching and learning in the outdoors: the current state of outdoor learning in schools in Wales**

Name of lead researcher: Graham French (Bangor University)

Staff should read and initial each box and sign the form below.

1	I confirm that I have read and understood the information sheet for the above study	
2	I understand that participation is voluntary and that there will be no adverse consequence if I choose not to participate	
3	I understand that I can withdraw from the study at any point prior to presentation or publication	
4	I understand that participants' real names will never be used in any presentation or publication	

I consent to participate in the study. Please circle: YES NO

Signature

Date

Appendix 2: Survey

Page 1: Project Overview

Teaching, and learning in the outdoors: the current state of outdoor learning in schools in Wales

This project seeks to build on a previous Welsh Government funded study that investigated the impact of the Covid-19 pandemic on the health and well-being of children, young people, education professionals and ITE providers. Study findings showed 'Outdoor learning played an increased role, both in and out of school, in supporting physical and mental well-being' and a subsequent recommendation called for '...greater support for outdoor learning'.

As outdoor learning played a significant part in the health and well-being of children and young people during the pandemic, it is reasonable to suggest it will continue to play a role in supporting school communities and their members as they recover.

There is currently a gap in the evidence base as to how frequently schools engage in outdoor learning and what format this outdoor learning takes. To ensure equitable and high-quality bilingual access to outdoor learning for all children in Wales, a national strategic vision is required, and this needs to be informed by the current state of play with respect to provision.

This project is using an approach already demonstrated as effective and reliable from previous studies in Scotland and will provide evidence of the current outdoor learning capacity of schools in Wales. The data gathered from this study has the potential to establish a baseline for Wales and support future effective distribution of resources and highlight good practice to be shared.

Page 2: Privacy Notice and Consent

- I confirm the school has received the information sheet and the headteacher has consented to the schools' involvement to take part in this project.
- I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason and without consequences to myself.
- I give permission for my data to be stored and processed in accordance with GDPR (2018).
- I agree to my anonymised data being used in study specific reports and subsequent articles that will appear in academic journals as part of this study.

By completing this survey I give consent and agree to take part in the study Required

- I consent and agree

Page 3: Contextual Information on Outdoor Learning Session

Please complete the following boxes to provide contextual information on your last outdoor learning session

- Date of session:
- Year group/s involved:
- Time spent outdoors:
- Number of pupils involved in session
- How many male pupils in session?
- How many female pupils in session?
- Total number of adults in session
- From the total you have provided above, please provide further details

	Teacher	Teaching Assistant	Parent/Carer:	Other:
Adults involved in session (Please tick all that apply)				

(If ticked other, please provide details)

Page 4: Session Focus

- Please tick all boxes that apply

What focus did your sessions have?

	Tick all those which were planned	Tick all those which took place
Nature/Nature-society/Sense of place		
Society: Social/Cultural/Community links		
Individual or personal development		
Studying or learning about Wales		
Teamwork/working with others/developing groups		
Personal/social wellbeing		
Practical activities/skills		
Conservation of nature or cultural heritage		
Influencing change/Advancing a cause		
Play/enjoyment/leisure		
Fieldwork		
Adventure activity		

Curriculum links		
Other (please add)		

- Curriculum areas addressed through Areas of Learning in Wales

	Tick those that were planned	Tick those which took place
Expressive Arts		
Humanities		
Health and Well-being		
Science and Technology		
Mathematics and Numeracy		
Languages, Literacy and Communication		

- Links to the Four Purposes

	Tick any that apply
Ambitious, capable learners, ready to learn throughout their lives	
Enterprising, creative contributors, ready to play a full part in life and work	
Ethical, informed citizens of Wales and the world	
Healthy, confident individuals, ready to lead fulfilling lives as valued members of society	

9.Engagement- Compared to indoor settings, children's engagement in activities outdoors appeared to be.... (Please tick the most appropriate)

- More than normal
- About the same
- Less than normal
- Unable to say

Awards/Schemes

	Tick any that apply
Eco Schools	
John Muir	
DofE	
Army Cadet	
ASDAN	

Princes Trust	
Healthy Schools	
Other:	

(If ticked other, please provide details below)

- Impact on Learning. When compared to learning indoors, did learning outdoors during this session enhance any of the elements below?

	Please tick all that apply
Progression	
Breadth	
Personalisation/Choice (Pupil led)	
Relevance	
Coherence	
Challenge and Enjoyment (Split)	
None of these	
Other	

If ticked other, please provide further details below

Final page

- Thank you for taking part in this survey.
- If you have any queries, please contact: lisa.formby@glyndwr.ac.uk

Appendix 3: Scottish Survey example

Nursery daily log

Teaching, Learning and Play in the Outdoors:
A Survey of School and Pre-school Provision

 UNIVERSITY OF STIRLING

DAILY LOG for NURSERIES

Today's date:	Today's Weather:		Numbers outside	
Duration of morning session	Number of girls attending:	Number of boys attending:	Number of girls attending:	Number of boys attending:
Duration of afternoon session	Number of girls attending:	Number of boys attending:	Number of girls attending:	Number of boys attending:

Start time	Description of Main Outdoor Activity/Activities	Approx. time outside (minutes)	Numbers outside	Boys	Girls
8am					
9am					
10am					
11am					
12 noon					
1pm					
2pm					
3pm					
4pm					
5pm					

The Planned Purpose or Focus of Today's Outdoor Activities	Tick any that were planned
Nature / Nature-society / Sense of Place	Conservation of natural or cultural heritage
Society / Social / Cultural / Community Links	Influencing change / Advancing a cause
Studying or Learning about Scotland	Play / Employment / Leisure
Individual or personal development	Fieldwork
Teamwork, working with others, developing groups	Adventure Activity
Personal / social wellbeing	Assessment of learning
Practical activities or skills	
Other (write in):	

/Please turn over

Curriculum Areas Addressed	Tick any that were addressed	Tick any that were not addressed
Expressive Arts		
Health & Wellbeing		
Language / Literacy		
Maths / Numeracy		
Foreign Languages		
Religious & Moral		
Sciences		
Social Studies		
Technologies		

Approaches to Learning & Interdisciplinarity	Tick any that were addressed	Tick any that were not addressed
Creativity		
ICT in Education		
Active Learning		
Peer Learning		
Collaborative / Cooperative		
Reggio Emilia approach		
Interdisciplinary Learning		
Other (write in):		

Engagement Outdoors (Circle ONE)
Compared to indoor settings, children's engagement in activities outdoors appeared to be:

More Than Normal	About the Same	Less Than Normal	Unable to Say
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Impact on Learning
When compared to indoors settings, did the outdoor activities result in an enhancement of these elements in children's learning? (Tick any that applied)

Progression	Breadth	Personalisation / Choice	Depth
Relevance	Coherence	Challenges and Enjoyment	Other (write in):

Thank you!
Your contribution is valuable to us.
Please return the completed form to your nursery / school's Research Coordinator.

If you have any queries about this survey, please contact your school's nominated Research Co-ordinator. Alternatively, email Learning Research Assistant at learning.research@stirling.ac.uk or phone/text 07881 933 177.





























